

CHINA'S DEVELOPMENTAL STATE AND THE MAIN DETERMINANTS  
OF ITS GROWTH DURING THE REFORM ERA

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## DECLARATION OF ORIGINALITY

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## ABSTRACT

### China's Developmental State and the Main Determinants of Its Growth During the Reform Era

This master thesis examines China's national development in late 20<sup>th</sup> century in the light of Japan's development process that has started with the Meiji restoration in late 19<sup>th</sup> century. The research is conducted in five parts in which starts with an introduction that provides a basic ideological discussion over the ideas on development and hegemony, and continues to discuss the main framework of 'the developmental state' theory developed by Chalmers Johnson in the early 1980s. A brief background to the theory is also presented during the first chapter, which is followed by the second chapter that offers a retrospective showcase for the 'Japanese developmental state' that follows with the Korean and Taiwanese and some other successful and failed examples of the model. Nonetheless, the economic stagnation in Japan that has started in the early 1990s is pictured to show the whereabouts of the 'developmental state' at the very place it started.

The third chapter starts with China's development story starting from the post-1978 'reform' era. The political economy and the institutional structure of the Chinese state until recent years are examined to understand whether the Chinese state suits the 'East Asian developmental state' model at any measure. The fourth part includes a mathematical analysis to see whether the provided data for a wide range of Chinese industries support China's development model to evoke the Japanese case. The fifth and the last part winds up with a conclusion.

## ÖZET

### Çin Kalkınmacı Devleti ve Çin'in Reform Dönemi Yüksek Büyüme Performansının

#### Ana Etkenleri

Bu tez, Çin'in 20. Yüzyıl sonlarına doğru başlayan ulusal kalkınma sürecini, 19. Yüzyıl sonlarında Meiji restorasyonu ile başlayan Japonya'nın kalkınma sürecinin ışığında incelemektedir. Araştırma beş bölümden oluşmaktadır, ve gelişim ile hegemonya üzerine basit temel bir ideolojik tartışma ile başlayıp, Chalmers Johnson tarafından 1980'lerin başında kurulan 'kalkınmacı devlet' teorisinin ana çerçevesini inceleyerek devam etmektedir. Teorinin gelişimine dair kısa bir evveliyat giriş bölümünde mevcuttur. İkinci bölümde ise 'Japon kalkınmacı devleti', bilahare Kore ve Tayvan ve bazı diğer başarılı veya başarısız 'kalkınmacı devlet' modelleri retrospektif bir yaklaşımla sergilenmektedir.

Üçüncü bölüm Çin'in kalkınma hikayesini, Mao Zedong sonrası Çin Komünist Partisi liderliği ile yükselişe geçilen 'reform' dönemini ayrıntılarıyla inceleyerek devam etmektedir. Çin devletinin yakın zamana kadarki ekonomi politikası ve kurumsal yapısı, bu devletin 'Doğu-Asya kalkınmacı devlet' modeline ne nebzede benzediğini anlamak adına tetkik edilmiştir. Dördüncü kısımda, Çin'in kalkınma modelinin Japonya örneğini çağrıştırıp çağrıştırmadığını görmek için Çin'in çok çeşitli endüstrilerine dair verilmiş olan veriler üzerinden gerçekleştirilen bir matematiksel analiz içermektedir. Beşinci ve son kısımda ise sonuç bölümü ile tez tamamlanmaktadır.

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## DEDICATION

This master thesis is dedicated to my family, who have never wavered in their support and love for me.

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## CHAPTER 1

### INTRODUCTION

This dissertation intends to designate the similarities and differences between the development processes of People's Republic of China (PRC) and Japan, the histories of the development processes in East Asia and the political economy of the late-developers in the region, as well as the current whereabouts of the 'East-Asian developmental state' that will be elaborated with significant detail. Throughout this dissertation the methodology will be building up on the retrospective theoretical progress of the developmental state model, which is a specific form of political economy, mainly concerning industrial policies. China's political economy starting from the 'reform and opening up' period that came along with Deng Xiaoping's succession of power in Chinese Communist Party and continuing all the way to our day will be scrutinized. In the latter part of the research, a comprehensive quantitative analysis will be carried out to figure out the relevance between the available data of production in China over the course of the years 1995-2011 and the theoretically described political economy model, in order to discover whether this model still applies to China.

Through the introduction, my main purpose is to present the theoretical and historical background of the 'developmental state' model not only for its comprehensive and intricate political structure, but also for the representative attribute it holds on the concept of the late-development theories to explain the course of formation of the 'East Asian developmental state'. Many questions come to mind, regarding the reason of developmental state being related to East Asia per se. Why not name it as the Japanese model of development? Why set geographic

margins for a theory that has proven itself to be successful in macroeconomic measures? Answers to such questions are aimed to be given to the within this research.

Development has been achieved via multiple models some of which are named after peculiar nations that were successful in realizing it. The early achievers of economic development have been an inspiration to others and the developing nations have tried to adapt these models to their own standards. As there has been consecutive catching-up stories in this race, the champions of economic development constituted their sui generis norms for democratization that ran concurrent to a formation of market liberalization, which winded up becoming part of a single global market.

The liberal market economies saw their heyday in the post-WWII era with the establishment of Bretton-Woods institutions such as the World Bank (1944), United Nations (1945), IMF (1945) and NATO (1949) that reigned in the First World over four decades of time, until the collapse of the Soviet Regime. Along with the Second World's demise, there was no other protagonist that could impose an opposing political economy theory on possible regimes. Thus, it became possible for the western super-powers to make compelling demands about their neo-liberalization program by consistently increasing the pressure on the autocratic and non-democratic regimes. Prior to the end of the Cold War, the Western academia had already put remarkable effort on an apparent unipolar world. The block led by the US adapted a new policy to promote democratic regimes with governments that had pro-deregulation agendas or support liberalization-prone groups in recalcitrant countries, which resisted globalization by protecting their currencies and infant industries, taking *machievallist* measures that ensured the deregulation process at all costs of

which even ended up in coup d'états in many South American countries as well as in the 1980 military intervention in Turkey and the Greek military junta of 1967-1974. This new pivot, named *development-democracy* hypothesis, was developed by prominent members of the Western academy, namely Lipset (1981) and Huntington (1984), who asserted that economic development gave greater chance to create and sustain democracy, while previously many others, including Huntington and Nelson (1976), had argued about the proximity of democracy to achieving rapid economic growth being irrelevant (as cited in Pourgerami, 1988, p. 124-125). While the debate on the validity of such theories were more thoroughly discussed, the political frame of the West started to become unequivocally dominated by the US-led development-democracy theory. The political economy model in the post-WWII era that promoted development over deregulated markets showed three significant paradigm shifts that incrementally enforced its norms. First is the Thatcher-Reagan era that completely ruled over the other development models of its Western allies. The case of Japan will be handled in more detail for this period. Secondly comes the collapse of the Soviet Regime that created a power vacuum, which was to be filled by an Anglo-American hegemony. The last one is the 9/11 attacks that helped the globalism agenda gain significant momentum, which was hampered by 2008 US banking crisis and its aftermath follows to this day.

Regarding the dichotomy, the world was pulled into during the Cold War, a single case had a brief period of presenting an alternative that was less involved with ideological priorities. Japan had exhibited a growth oriented economic development that later on became to be recalled as a *miracle*, which had certainly referred to the double digit growth figures that lasted for multiple decades, while creating an unfathomable wealth, which was dispersed with enviable equity across the nation

and gradually enlarged the technological capacity of the domestic industry. This achievement soon became impossible to ignore by the counterparts of global hegemony, hence their national academic circles.

The first academic work that scrutinized the case of Japan and presented it as an alternative against the Cold War dead-knot was Chalmers Johnson's *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975* in 1982. The reason for Johnson to choose Ministry of Trade and Industry (MITI) as the pivot to his book was that MITI was the core institution to facilitate and execute a successful political economy model of industrialization.

What Johnson did with his seminal work should rather be deemed bold. It was not a courage of ignorance since Johnson did not propose an alternative paradigm theory that could challenge either *laissez-faire* economic liberalism of the West or the collective Marxist ideology that has created a tornado, which aimed to imbibe anything that was not big enough to stick to its ground, just like its counterpart did during the 1980s and 1990s. Eluding the discrepancy of clashing ideas, Chalmers (1982) conceptualized the developmental state that worked successfully for Japan; hence creating a concept of which became a role model to other suitors and produced the latter success stories. This caught more attention over years as the concept of the developmental state was referred to as an East Asian model. The reason for this book being written, which was the “miraculous” achievements that helped Japan to step into the world political arena as an economic super-power during the 1960s and 70s, was removed from sight with the economic crisis of 1991 that sucked Japan into a perennial depression. This overwhelming scenario led Japan to abandon its roots to success and adopt neo-liberal market policies, gradually restructuring its once-legendary institutions and peculiar system.

Yet other success stories have also proved that the developmental state model that Japan had started had a *Lebensraum*<sup>1</sup> in the capitalist conjuncture as long as it had the means to compromise the US hegemony.

Developmental State has theories of its own, but one should not ever expect a well-defined conventional social theory approach like Polanyi's *The Great Transformation*. Instead the developmental state represents a much more practical and pragmatic approach to development policies that form an austere, yet an intact kernel strategy to catch up with their contemporary counterparts. The only nations, which succeeded at their attempts in the post WWII period, still stand as the four East Asian countries, namely Japan, South Korea, Taiwan, Hong Kong plus their proximate neighbor, Singapore. All these countries achieved extraordinary rates of economic growth that averaged approximately 10% over decade long time intervals; thus attracted stupendous attention from political economists, as well as their neo-classical colleagues. Before making any comparisons between these developmental state models, one should understand the literature that lies behind Johnson's idea of a developmental state model as described below in the first place. Secondly the major attributes of such a model will be defined, later on to be continued with the case studies to corresponding states. Johnson (1982) enquired a so-called Japanese model, which had South Korea and Taiwan as its quasi-imitators, while the city states of Singapore & Hong Kong does not necessarily fit in it. Therefore, the first three will be a part of the analytical survey for their proximity in attributive patterns.

Meanwhile some case studies other than the East Asian developmental state will also be loosely referred to.

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<sup>1</sup> Lebensraum in German, literally means 'living space', which is the territory that a state or nation believes is needed for its natural development, especially associated with Nazi Germany. As well as its geographical content, it refers to military and naturally economic expansion.



### 1.1 ‘Gerschenkeronian Model’ frame

Perhaps the first fundamental model that was formed to describe development through an academic perspective was authored by Alexander Gerschenkron that is the three-country paradigm that centers the processes in Britain, Germany, and Russia during the nineteenth century, namely the ‘patterns of industrialization’. Although the model is constructed on the temporal and spatial boundaries of 19<sup>th</sup> century Europe, there are striking similarities that intersect with and embrace the latter East Asian model, which will be defined as the most recent development model. Meanwhile the institutional bases of industrialization in the Gerschenkeronian model can be described within three counterparts:

- (1) Britain was the avant garde of Industrial Revolution, where entrepreneurship and accumulated private capital were the main sources of the process.
- (2) Germany was the initial latecomer, where ‘the universal banks’ were in the leading role for financing and organizing the private sector.
- (3) Russia was a backward country through and through, thus the establishment of industries were directly undertaken by the state (Shin, 2002).

The main theme here in this model can be noted as a fierce competition among nations. Russia and Germany are pictured in a cutthroat race to obtain high-tech industrial facilities in comparison with their contemporaries. In order to realize such ambitious goals, both parties were in need of robust institutions that could maximize the efficiency for utilizing scarce resources. Gerschenkron recognizes the crucial role of the universal bank in Germany’s case and calls them “perhaps the greatest organizational innovation in the economic history of the century” (as cited in

Shin, 2002, p. 6). Within this perspective East Asia fits in the context of forerunners and latecomers that encompasses even a more strenuous attempt of technological catch-up.

For the case of Japan in the post-WWII period, this time it was the US that was the forerunner with distinctive industrial capacity and sophistication. Although Japan had lost its domestic facilities in Korea, Taiwan and Manchuria, the pre-war know-how was still there, since the bureaucrats as well as the business circles were not removed from their posts. The most peculiar case in these times is the steel and iron industry, which serves as a stereotypical example that reminisces of Germany in the 19<sup>th</sup> century. The impressive side of the story for this specific context is that Japan was the first country in history to become world leader in an industrial field in spite of the chronic problem of raw material shortage. The success came for the execution of the ‘Nishiyama model’, which was advised by Nishiyama in 1950, who was then the head of Kawasaki Steel. The proposal was to install the most advanced and contemporary technologies to the newly established Chiba Works in order to be able to achieve global competition levels. Yonekura (1991) singles out that MITI initially regarded the plan as ‘an impossible dream’ and named the steel and iron industry as an ‘inappropriate export industry’ (as cited in Shin, 2002, p. 11). The ‘impossible’ was made possible for the immense amount of capital that could be spared for the heavy industrialization together with reaching much more intense domestic competition and scale economies. Achieving all was possible via the *keiretsu*<sup>2</sup> conglomerates that were holders of institutional jurisdiction for capital

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<sup>2</sup> Keiretsu (in Japan) is a conglomeration of businesses linked together by cross-shareholdings to form a robust corporate structure, which have evolved from the former *zaibatsu*, a term that used to refer to the industrial and financial business conglomerates during the Empire of Japan in Post-WWII era. The main difference between zaibatsu and keiretsu is the family owned structure of zaibatsu’s that operate with a more archaic business style, while the keiretsu were operated through a congregation around a bank that financed the companies within a keiretsu that have certain business interests.

harboring, just as it was the universal banks in Germany as Gerschenkron had stated. The situation in Japan appeared as such that the banks were to stimulate competition within the *keiretsu* unlike Germany, where the banks would promote cartel associations and the non-existent foreign debt was the principle upside for Japan's development process. Government of Japan on the other hand was the side that tried to quell excessive competition. Meanwhile it should be noted that substantial financing was raised domestically. Japan's foreign debt to GDP ratio in 1975 (0.35%) was the lowest among the U.S. (4.07%), the U.K. (6.33%), France (0.53%), and Germany (0.40%) according to IMF data (Shin, 2002).

Following Japan, the next generation of latecomers were typically Taiwan, Singapore and South Korea, while the case of an 'extremely backward' country fits the circumstances of the 1950s China in certain ways. Since the Gerschenkronian schema delineates the relationship between the financial sector and the industrial one within the "backwardness" frame, the development procedure was to reframe and reinterpret those relationships according to the conditions of its *sui generis* time and space as a matter of course.

## 1.2 'The Flying Geese' model

Industrial policy was essentially formulated as a late industrialization model that has been frequently associated with the "flying geese" model that is displayed in figure 1. The term was initially coined by Kaname Akamatsu in the 1930s, yet was presented, both to Japan and the world academia in English in the early 60's (Kojima, 2000). This 'four step' industrialization that begins with the import of new products and technologies to less industrialized countries to establish "homogenous industries" over time, later on led to obtaining technological capacity to establish their

indigenous capital goods industries, thus acquiring the capability of exporting their products to less developed economies, as the model was adopted by Korea at the very most (Bernard & Ravenhill, 1995). Amsden (1991) meanwhile suggests that conducting a general analysis of late industrialization, thus and so creating an idiosyncratic model to the concept is another valid option for defining the industrial policy and finding out an analytical explanation why only specific countries have succeeded in adopting the model. A critical point researchers unequivocally agree upon is that late-industrialization is a “learning” process and the nations that are able to execute a character that is centered on this process were able to achieve such a heavy goal. Chang (2009) displays a prominent example in this matter on account of Japan. In the beginning of Meiji Restoration many foreign experts were hired in order to compensate for the lack of educated staff to implement modern industrial know-how. While the number of these staff were 527 in 1875, it had already decreased to 155 by 1885, which is a clear proof for the high speed of cognitive assimilation concerning Japan (as cited in Tiryakioğlu, 2015b, p. 228).

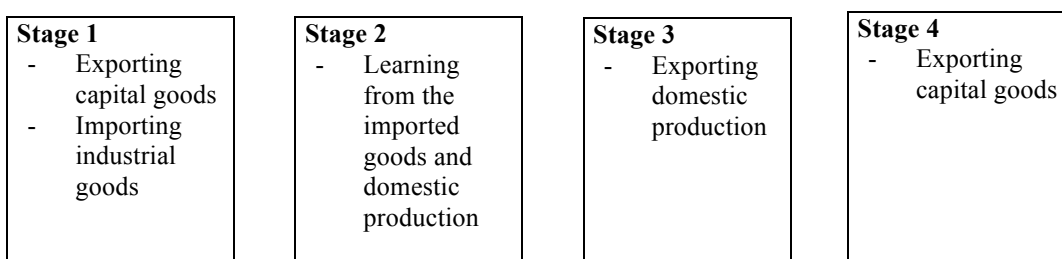


Figure 1. ‘Flying geese’ model.

Source: Tiryakioğlu (2015), p. 50.

The late-industrializers enjoyed significantly lower wage rates vis-à-vis industrialized countries. Although this comparative advantage was valid for the

exports of labor-intensive products such as textiles, this upper-hand could not be kept intact forever as higher productivity levels with lower costs are preferable/profitable compared to low-wage advantages only. Since the flying-geese model displays the impossibility of a latecomer to achieve industrialization through inertial low-technology production, the competitiveness feature cannot be maintained without a new product that uses new technologies, while devaluing the local currency would be of little use after a certain point (Akkemik, 2009 & Amsden, 1990).

### 1.3 The East Asian developmental state model

Although the ‘flying geese’ model is more proximate with the developmental state model, Johnson (1982) has put together a more sophisticated and detailed outline that serves a more comprehensive and practical approach to late-development. First and foremost, approaching to the matter with a more general geographic proximity, Confucianism should be defined as an integral part of East Asian developmental state logic. As Chang and Grabel (2005) signifies, “the cultural heritage of Confucianism makes explaining such idiosyncratic qualities like strong work ethics, saving conscience, resolute approach for the education investments and submissiveness before the political goals of the authoritarian state, meanwhile setting the infrastructure for the advanced state bureaucracy that is essential for the success of foreign trade and industrial policies”<sup>3</sup> (as cited in Tiryakioğlu, 2015a, p. 17). Meanwhile Japan’s economic development was analytically exhibited to have risen on the shoulders of the Japanese state by Johnson (1982) for the first time. As previously remarked, one should eschew having high expectations for such as an anthropological survey of this issue on detailed and analytical basis. The furthest

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<sup>3</sup> The translation belongs to me; therefore I assume responsibility for any possible misunderstanding that might be allowed due to my mistakes.

Johnson converges into the cultural aspects is to briefly mention the studies that point to a national-character explanation that is a unique quality of social cooperation with an astounding complacency, hence ignoring Confucianism to a certain degree (or possibly avoiding making points that fall within the scope of another academic field). However, this should not evoke foul ideas that might lead to underestimation of what Johnson had commenced by stimulating a tipoff point. His argument was pioneering regarding the scope of political economy, which required attentive work for avoiding controversial ground about the point he wanted to make. The further the discussion on the developmental state advanced, the more sophisticated it got, hence provoking attention from wider range of scholars, who were more interested in the Confucianist attributes of the developmental state (see Abe, 2006).

The first intangible quality that was common in all East Asian developmental states was a powerful and relatively authoritarian state bureaucracy. As the globalization process inflicted higher pressure on the East Asian developmental states regarding their democratization, we should be wary of the fact that democracy was not a very favorable attribute of the ruling elite, since satisfying the expectations of the people would be too much of a luxury for a late-industrializer. Japan held the upper hand against South Korea and Taiwan in terms of being exempt from this pressure, to be the only uninterrupted democracy in the WWII aftermath, yet the *miracle* happened to realize under an incessant one-party rule until the early 1990's. Therefore, a typical notion of the developmental state is unanimously indicated as authoritarianism. Whether it be displayed in 'soft' or 'hard' manner, the state had to be able to avoid to pay too much attention to any interest group and concentrate on its own development program at the cost of others' benefits, as democracy might be a goal that could very well be achieved after the economic development has matured,

which was the case in the Korea and Taiwan. A prominent example that supports the idea in favor of the once-authoritarian states in East Asia is the failed developmental state in India, where the democratic regime eventually became too embedded to satisfy the needs of diversified interest groups in order to win their favor for the elections, which led to a defect and dysfunctional ‘appointive’ bureaucracy (Herring, 1999). Nonetheless, the aims of the developmental state did not include the achievement of a welfare state until democratic demands had surfaced to an incompatible level for the business and government elites to handle. Even though Japan is distinctive in its democratic standards from South Korea and Taiwan, labor could not be involved in the policy process (Öniş, 1991). In Japan, communists took over in the labor unions by the 1950’s and a collateral consequence of severe conflicts between unions and employers arose. Yet, the introduction of practices such as lifetime employment system (*shuushin koyousei*), and seniority-based wage system (*nenkou joretsu*) can be deemed as wise maneuvers that helped to decrease the tension reasonably (Akkemik, 2013).

Speaking of bureaucracy, it is obvious in all the success stories of East Asia such groups have to be exempt of political pressure in order carry out a prospering interventionist (does not necessarily mean totalitarian) policy of its own. Johnson made the central pillar of his book MITI of Japan and its counterparts in South Korea and Taiwan should be mentioned. The Economic Planning Board in Korea and the Council for Economic Planning and Development in Taiwan were the pivotal agencies that steered the ship. The idiosyncratic character for all these institutions besides the relative autonomy they enjoyed were their meritocratic structures that also brought an easier accountability of these agencies. Wong (2004) explains that the bureaucracy consists of a national elite, hence “rarely were bureaucrats recruited

from schools other than Tokyo University in Japan, National Taiwan University, or Seoul National University in South Korea” (p. 351). It is assumable for a market economy to deploy its top-notch brainpower to facilitate the market. However, since the developmental state is ‘plan rational’, a state body that comprise a loyal and competitive group of employees can only be fetched through a meritocratic stature. No development theory should rule out this very fact and the high magnitude of importance of the idea beneath adapting such a recruiting process is an aspect that provides legitimacy for these institutions before the eyes of the business sector, as well as the other parts of the society. The meritocratic influence was expected to diffuse in all directions and in order to make a ‘just’ impression, one has to be literally so. Conflict management was a highly essential and sensitive matter for the success of developmental practice. Although the ideal may seem more like what Taiwan had done to prevent creation of any monopolies, Japan and Korea consulted the fast-track method by creating extremely huge monopolies that were vertically integrated to practice equity within their organization. But the state made sure that as long as all parties played the conformist, each party was to be treated equally, yet still, non-submissive examples like Honda and Sony were also present (Akkemik, 2013). The legitimacy of the bureaucratic elite meanwhile, was further ossified by the early retirement of the top-bureaucrats to move into prominent positions in business and politics, where in the US one would see exactly the opposite (Öniş, 1991 & Johnson, 1982).

Woo-Cummings (1999) points at Johnson’s theory that “successful capitalist developmental states have been quasi revolutionary regimes, carrying out social projects their societies endorsed...” (p. 7). History of modern East Asia has placed ‘nationalism’ to its ideological center, as controlling financial sources have been its



practical crux. Mobilization of capital in all forms were procured via institutions like the Chinese Communist Party and MITI of Japan, which are successors of war-time legacies. It should also be remembered that Japan, South Korea and Taiwan were all facing the Communist threat very closely, thus this helped for them to “bolster a nationalistic vision” (Öniş, 1991) and allure an unconditional American support, which included the theory of “free ride” that allowed an export-led strategic partnership for East Asian development model continue for decades, just as they found easy access to technology for productive means. Table 1 provides a concise outlook to the intimate trade relations between the US and East Asian developmental states. The US bought almost everything Japan could offer and when Japan was not enough to feed the American needs, Korea was given the chance to supply for whatever may be necessary. According to Baran, “...absence of such a nationalistic developmental state as found in the early capitalist Europe or Meiji Japan as the major cause for the underdevelopment of many poor countries” (Chang 1999, p. 182).

Table 1. Volume of Trade Between the US vis-à-vis Japan, Taiwan and S. Korea (for given years between 1985-2010).

		1985	1990	1995	2000	2005	2010
Japan	Exports	22,630.9	48,579.5	64,342.7	64,924.4	54,680.6	60,471.9
	Imports	68,782.9	89,684.0	123,479.3	146,479.4	138,003.7	120,552.1
	Balance	-46,152.0	-41,104.5	-59,136.6	-81,555.0	-83,323.1	-60,080.3
Taiwan	Exports	4,700.0	11,490.8	19,289.6	24,405.9	21,614.5	26,050.0
	Imports	16,396.3	22,665.9	28,971.9	40,502.6	34,825.8	35,846.8
	Balance	-11,696.3	-11,175.1	-9,682.3	-16,096.7	-13,211.3	-9,796.8
Korea	Exports	5,956.3	18,485.4	25,379.9	27,830.0	27,571.6	38,820.6
	Imports	10,013.3	14,404.2	18,485.4	40,307.7	43,781.4	-10,054.5
	Balance	-4,057.0	-4,081.2	1,195.9	-12,477.7	-16,209.8	-10,054.5

Note: Only the trade balance vis-à-vis Korea has witnessed a significant shift during the last half a decade. As 2014 imports account for \$69,518.4 billion, while exports are \$44,471.3 billion to form a net trade balance of -\$25,047.1 billion.

Source: <https://www.census.gov/en.html>.

Schneider (1999) vouches for Johnson's theory of developmental economy that deals with it as a separate practice besides command or market economies. This had an overt logic for the Japanese, since they actually stood in between a Soviet-style displacement of the market and the *laissez-faire* capitalism that Western ideologists championed. The Cold War consisted of binaries only, yet Japan proved both to Leninists and their arch-enemy "free" market imposers that state could stay somewhere in the middle to harbor a high growth facility that wields the forces of the market, but never displaces it to commit a suicidal mistake (Johnson, 1999). The hardest notion to obtain in any facility is possibly discipline and the developmental state forced extraordinary discipline on the private sector for enough time to achieve an advanced wealth level and globally competitive markets. Speaking of competitive markets, entrepreneurship is an essential quality that is linked to free market capitalists in the West, but the developmental state can execute such a function for it constitutes of individuals that also have ambitious goals. There is obviously a risk taken for this "entrepreneurial vision", but the nature of entrepreneurship assumes a certain amount of risk at every attempt it embarks upon (Chang, 1999).

Lastly but most importantly, the remark of the macroeconomic approach of the developmental state model should be underlined as an export-led model that pushes for obtaining more advanced technological facilities of which would subsidize the production forces to reach the most high-value added state possible. This would be exporting state-of-the art products to the world, as well as the technologies that are not present in lesser-developed countries, which would require perhaps a greater price than anything else would. The export-based macroeconomic policy also helped the trade balances in developmental states to give subsequent surpluses, which helped for domestic capital accumulation for further investment.

Therefore, the national resources were utilized for further development, while the societies of the aforementioned developing countries could reach higher welfare levels without being crushed under the pressure of foreign debt payments.

All in all, the common sides of developmental states should be very well understood in order to connect the dots more with great ease once the models are pried open individually. We can now continue with the historical and practical background of the developmental states in their idiosyncratic qualities.

## CHAPTER 2

### DEVELOPMENTAL STATES CASES AND INDUSTRIAL POLICY

This chapter's purpose is to give a clear outlook to the cases of the 'developmental state' model. The Japanese state will be elaborated in detail in the beginning for it has served as the fundamental model to attract such a capital academic scrutiny.

Possible cases that evoke the Japanese case or stand as a conceptual approach to the 'developmental state' model will also be examined to expand the angle of the view regarding the theory. In the latter, how the model was forsaken by its initial implementers shall be rigorously examined; while the 'main attribute' of the developmental state, namely industrial development policies, will be put through elaborate work that will serve as a collateral political economy explanation to late development theories that helped certain late developers to catch up with the early winners of the globe, in impressive time scales under tough measures. Recent industrial policies that incorporate state-of-the-art high-tech production scope will only be mentioned at the end of the chapter without providing any detail.

#### 2.1 Developmental state cases

The main case of the 'developmental state' obviously starts with the 'Japanese model' of Johnson (1982). The Korean and Taiwanese constitute the fundamental case-studies for the evolution of 'East Asian development state'. Yet as wider perspective for the theory is presented in Woo-Cumings' *The Developmental State* (1998), as various cases such as the French, Indian, Brazilian and Mexican are firmly elaborated to set a prolific literature to the concept that are observed hereinafter.

Singapore and Hong Kong are not assessed due to their specific condition of being city-states.

#### 2.1.1 The Japanese developmental state

The idea that constitutes the core to the initialize the East Asian development process is the leading role Japanese state had assumed for carrying out the industrialization process by taking *developmental* functions (Johnson, 1982). Japan's reform period corresponds to a later point than to the Western forerunners of development. Meiji period (1868-1912) consolidated the national dynamics around an imperial agenda that could initiate the industrialization for catching up with its Western counterparts. The early developmental political economy followed by the Meiji administration was to run a dual economy that consisted of stimulating policies for traditional agriculture sector on one hand, meanwhile establishing modern industries, which were more capital intensive (Lockwood, 2015). This enabled the nation to allocate the work force between less competitive and skill intensive agriculture and cottage industries, while enough investment could be allocated for the training of a higher quality human capital to be employed in manufacturing and processing, mineral extraction and so on (Nafziger, 1995).

Japan's eager attitude to relatively assimilate itself into Western world eventually received appreciation, hence acceptance between the elite powers. Sino-Japanese War (1894-1895) and Russo-Japanese War (1904-1905) proved that Japan could not be overlooked and a newborn imperial power could make a great partner to a great empire such as the United Kingdom, hence forming the well-known Anglo-Japanese alliance (Nish, 2013). Japan, therefore, gained quick access to technological knowledge in plenty of fields and it became the early developer of the East,

becoming a super-power within its geography. As heavy industry was being established in Japan with full speed<sup>4</sup>, the early structure of business enterprises were formed, namely the *zaibatsu*<sup>5</sup>. The end of Taishō democracy in the 1920s gave way for unveiling the imperial face of Japan, which quickly turned into a greedy military dictatorial regime that was in a dynamic cooperation with the fully compliant *zaibatsu*. Concurrently, the economies of scale were achieved by 1930s, especially due to rapid introduction of electricity between 1914-1930, which also enabled them to sustain the war economy. During this period, “Japan has emphasized gradual technical and capital improvement, enabling government, business, and labor to learn through experience.” (ibid, p. 128).

Japan’s expansionism had already proved successful in Taiwan (1895) and Korea (1910), colonies that helped Japan feed its nation and compensate its raw material needs. The global crisis that started in the US in 1929 and diffused to the globe had also required a more disciplined economy policy, functioned as another catalyst for the military gaining influence over the government, hence the military embarked upon a bigger plan, which turned into a complete dominance by 1937. This process did not only gradually led to the destructive Pacific War between 1941-1945, but also created deep-seated animosities in the geography that cannot be eradicated even to this day, as the Second Sino-Japanese War between 1937-1945 stands as a clear example (as cited in Akkemik, 2013). In no time, Japan had mobilized all its resources to wage the Pacific War and for its mainland and colonies could not compensate for their needs, China became the next target. A successful colonization process was executed in Manchuria, but full-scale invasion of China consumed Japan in the end rather than subsidize it. Meanwhile the ultimate control

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<sup>4</sup> A prominent example is the Yawata Steel Works, which was established in 1896 to satisfy the increasing demands for major heavy industries like shipbuilding, railway, construction and armament.

<sup>5</sup> A *zaibatsu* is a large Japanese business conglomerate.

of the military technocrats did not help to ameliorate the lack of coordination between the industrial supervision organs (*touseikai*) that were established by the government itself. The heart of the bureaucracy, on the other hand, was the Ministry of Commerce and Industry (MCI) that was established in 1925 and transformed into Ministry of Munitions (MM) in 1943, then back to MCI in 1945. The war was lost under such a high mobilization and discordance between industries that was in the hands of such a centralized and powerful autocracy. The most significant point that will connect the past and future of this point is that the Supreme Commander of Allied Powers did not dismiss these military bureaucrats during the occupation between 1945-1952, but rather preferred to work with them. The main reason for this decision is a matter of controversy, but the main concern of the Americans after the invasion should have been the regime in post-war Japan and the side it will choose to stand by for the upcoming Cold-War era (Akkemik, 2013). Hence, the post-war state bureaucracy was dominated by the pre-war and wartime officials, who had learned how to make industrial policy work during war era and it took until 1976, when Wada Toshinobu became the first vice-minister without any experience of Ministry of Munitions era (Johnson, 1982). It was not only the personnel that was immune to change, but the institutions also. The *zaibatsu* cartels were conglomerated around a bank and being imposed to least alteration, were renamed as *keiretsu*, but even more important was that the pre-war institutions like MM and MCI were ‘reincarnated’ to form Ministry of International Trade and Industry (MITI) (Johnson, 1982).

A retrospective understanding of what basis MITI operated on can be obtained as Johnson (1982) stresses upon a very crucial point to help the reader comprehend the function of MITI as an implementer of industrial policies, while setting up a theoretical approach did not occur to them until the *miracle* was certain.

As late as 1973 MITI was writing that Japan's industrial policy just grew, and that only during the 1970's did the government finally try to rationalize and systematize it. Therefore, an individual interested in the Japanese system has no set of theoretical works, no locus classicus such as Adam Smith or V. I. Lenin, with which to start. This lack of theorizing has meant that historical research is necessary in order to understand how MITI and industrial policy "just grew." (p. 32)

This period corresponds to a time when Japan's economy and industry had caught up with the Western economies other than the US. Throughout these years, Japan refrained from accepting Foreign Direct Investment (FDI), which they believed that there would have been an unfair competition environment for their infant industries (Paprzycki & Fukao 2005). Thus, the approach of keeping distance from the FDI became deep-seated in the thinking pattern of Japanese bureaucrats as well as avoiding foreign debt, which had been a major headache during the Meiji era (Sussman & Yafeh, 2000). After the *miracle* was achieved under the leadership of MITI between the years 1955-73, meanwhile a new period of global politics was introducing itself with the oil crisis of 1973 and 1979 that shook the whole world and Japan's situation was no exception, yet they recovered in quick fashion. Although the growth numbers fell quite considerably after the second shock anyway, Japan had almost completed its industrialization by the time and had become an exporter of technology. The annual growth of the Japanese economy was still over 4 per cent in the early 1980s, which was well over other economies like the US and UK. By the mid-1980s, American fiscal policy makers felt desperate against the countries with perennial trade surpluses, namely Japan and Germany, thus setting up the famous Plaza Accord in 1985 at the Plaza Hotel in NY. The plan was to boost the domestic demands in these countries and appreciate their currencies against the US dollar, while the Federal Reserve found it to be the best time to depreciate the US dollar after a long and successful struggle against inflation. The initial response of the Yen



was “accordingly an exceptionally large appreciation amounting to 46 per cent against the dollar and 30 per cent in real effective terms by the end of 1986” (IMF, 2011). Figure 2 shows the appreciation of Japanese yen against the US dollar for a broader time interval for a retrospective outlook.



Figure 2. Japanese yen against the US dollar exchange rate (1972-2015).

Source: <http://www.tradingeconomics.com/japan/currency>.

The direct effect of the Plaza Accord was the immediate slowdown in the increase of Japanese exports as can clearly be seen in Figure 3, while the growth support due to ‘bubble economics’ is shown in Figure 4. Another very important result was that the valuable Yen made it a competitive obligation for the Japanese companies to invest overseas, causing deindustrialization in the Japanese homeland. This condition is called *kuudouka* ‘hollowing-out effect’ in economics (Akkemik, 2013). The results were shocking for the people of Japan, as many people lost their jobs for the national companies seeking more leveraged business by implementing foreign direct investments. This put the authorities under immense pressure for the Japanese economic development process was renowned to create miraculous achievements. Since there was no ultimate solution to the new consensus of

appreciating Yen, markets tended to take an alternate way, which put the economy of Japan in a path that was truly new to the world. The policy interest rate was decreased by 3 per cent, causing an excessive liquidity in the banks, thus starting a relentless lend-out trend, which was to lead to an intensive inclination to high-risk investments like stock markets. Real-estate prices also were wrapped up into a frantic state, tripling in just three years. Rental prices in Ginza were incomparably higher than any other estate in the world, while the land of Tokyo Imperial Palace was believed to match the value of the entire state of California.<sup>6</sup> Japan's luxury consumption index reached unfathomable levels, creating famous stories about Japanese tourists buying out the products of the most luxurious brands. This entire artificial frenzy trend in Japan made the people actually believe that this was a revamped version of the legendary economic success of the previous decades, like a 'Japanese Miracle 2.0'. We also have to consider for the boom in the output Japan had in 1987 was another fact that hampered the rationalization of the inconceivable bubble that was being created.

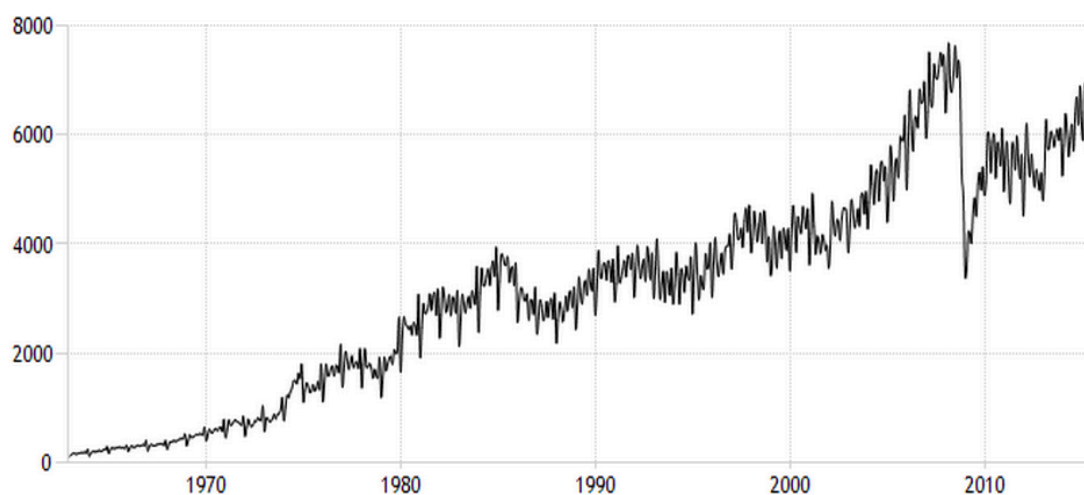


Figure 3. Export figures of Japan (1963-2015).

Source: <http://www.tradingeconomics.com/japan/exports>.

<sup>6</sup> Impocco (2008), as cited in Colombo (2012). Available online at <http://www.thebubblebubble.com/japan-bubble/>.



Figure 4. GDP growth rate of Japan (1981-1999).

Note: Graph generated based on World Bank data.

Following the Plaza Accord (1985) and its immediate effects of “rational” appreciation of Yen and thus the beginning of ‘deindustrialization’ of Japan for the sake of higher profitability left the new generation economists, politicians and bureaucrats in a predicament for which they had no experience. Decades-old constant economic growth and miraculous achievements, and the great confidence of the stamina shown against the oil shocks had created a certain belief in the government agencies that this problem could be overcome in the same manner. As Japanese firms were being promoted to concentrate on developing more value-added technological products, which also paid off its diligence in a short while, due to the ‘hollowing-out’ (shifting the production of lower value-added products abroad to gain comparative advantage), the domestic market found itself in the middle of a sudden wealth augmenting with the highly appreciating Yen. As the liquidity increased even more

in an environment where loaning out credits was relatively easier than any other part of the world, the risk management carried barely any importance at all for the immense accumulation in the savings during the rocket-fast growth. Crooked financial structure in the Japanese economy is deemed as the main reason that led to the forming of the bubble. It was the responsibility of the Ministry of Finance to guide the commercial banks to choose winner sectors (and firms) for the allocation of capital, and the interwoven government-business relations were the main determinant, which set the financial priorities for nurturing specific interest groups. Since the finance sector had always been highly dependent on the guidance of the Ministry of Finance, there was barely any reflex for risk management ingenerated within the market. Since the market expected it all to be done by the state, they did not assume the role of supervisor against any possible setback that may have emerged, and once they did comprehend what was about to happen in 1990, it was already too late (Akkemik, 2013).

The downfall of the Japanese economy in 1990 was a result of “overconfidence and arrogance” that Japan allowed on itself (Johnson, 1999). The finance sector collapsed at a time when nobody expected as Colombo (2012) puts it; “At the very peak of the bubble, a 1989 survey of institutional investors showed that the majority of them did not believe that the Nikkei was overvalued”.<sup>7</sup> After the bubble burst, share prices lost a third of their value within a year, and two decades of dismal economic performance followed. Nominal stock and land prices went down to their early 1980s levels. Nikkei Index plummeted to 20,000 in 1990 and further down to 15,000 in 1992 (1989 value was 39,000), while in 2004, the most expensive

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<sup>7</sup> Available online at <http://www.thebubblebubble.com/japan-bubble/>.

land in Ginza had fallen back to 1% of its peak value prior to imploding of the bubble.

The insight of the crisis has shown that it was the banking sector that collapsed dramatically. Production performance was more or less the same after all. Yet, the keiretsu system is deeply entangled to the main bank system and so is the huge insurance sector that was to suffer from the losses. Today, it seems even a greater ‘miracle’ that Japan could only get away from a financial crisis of such depth, as Hoshi & Kashyap (2004) exclaims:

“Japan’s banking industry has not had a net operating profit since fiscal year 1993. Until late in the 1990s, the banks offset these losses by realizing capital gains on long-held stocks (through cross-shareholdings) and land. But at this point, little more can be squeezed from these sources. Since 1995, the banks have recorded net losses in more years than not. These losses are too large and persistent to be blamed solely on the sudden decline in asset prices in the 1990s. Indeed, as the Bank of Japan (2002) has pointed out, these loan losses amount to 80 per cent of the increase in loans between 1986 and 1990! Thus, it is implausible to suggest that the continued losses can be attributed to misguided lending decisions during the late 1980s. Rather, they are indicative of deeper underlying problems facing the banking industry.”

The government put a final effort to restructure the financial sector after 2001 and merged some of the eleven main banks with each other in order to survive the insolvency of their customers, leaving Japan with seven major banks only (Tokyo-Mitsubishi, Mizuho, Mizuho Corporate, UFJ, Mitsui-Sumitomo, Resona and Saitama-Resona). Obviously forming a clear definition to these set of problems in the Japanese banking system for the 1990s crisis times is a hard nut to crack. But our concern in this dissertation is neither the crisis and the results it brought upon Japan. Nor are we concerned with the deficiencies in Japanese banking sector and its intertwined relations with the bureaucracy (and its deteriorative facilities) that may have led to such a catastrophe, which gave way to a deadlock political path of a

relentless fight against deflation, hence causing an eternal nuisance for growth could not be stimulated through either zero-interest rate policy or constant “quantitative easing” operations.<sup>8</sup> But any study that observes the Japanese political economy during the bubble and recession periods must remind themselves about the hardships the Japanese banking sector had been through.

Japan’s “Lost Decade” has been an everlasting abyss, where Japan has sought redemption by gradually altering their developmental state into a much more neoliberal economy through privatization and a more open market to international buyers. Ishi (1999) is thankful to the development in 1950’s and 1960’s; saying that otherwise Japan would have had to succumb to IMF pressure without a state-of-the-art industry, but also re-iterates the opinion that this high growth process created an arrogant approach between the Japanese bureaucracy that market rules would not be able to enforce its way into Japan. Due to the inefficient management in certain state-owned enterprises, the LDP government adopted a privatization policy from 1980’s onwards. Starting with the national railway company *Kokutetsu* and continuing with certain monopolies such as Japan Tobacco (JT) and Nippon Telegraph and Telecom (NTT), the process was executed resolutely despite stern opposition from the Communists (Akkemik, 2013). Although the Japanese developmental state is not clearly thought to have abandoned all of its facilities over the control of the market, the desolation caused by the ‘lost decade’ and the protracted recession it brought with, was fought through institutional reforms that targeted more dynamic state facilities. A small state structure was finally formed with a further liberalization policy in parallel that was carried out by the LDP under the rule of Junichiro Koizumi, who was able to lead the government for rather a long time (2001-2006)

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<sup>8</sup> Interest levels in Japan fell near zero by 1995, while quantitative easing policy was initiated after 2001 with Koizumi government. The most blatant practice of the policy has been the *Abenomics*. Available online at <http://www.washingtonsblog.com/2015/01/qe-failed-spark-inflation.html>.

thanks to his being a popular figure among the Japanese society and the well reception of his political economy agenda by the Bush government. Unfortunately, he could not reign long enough to see the privatization of the venerable postal service, which constitutes of banking and life insurance services besides delivery. The privatization was concluded in 2007 amid fierce political debate, yet the process was put on hold in 2010 and is still not resolved to this date.<sup>9</sup>

It is an unfortunate truth that the Japanese developmental state was transformed into a more deregularized market economy. The Japanese bureaucrats were not able to act promptly to the altering the global socio-economic environment; hence left themselves in a limbo. The panic caused by the stubborn stagnation led the Japanese state to opt for the final reaction of aligning with the globalization agenda of the US, rather than trying to adapt an indigenous political economy strategy that once created wonders not only for themselves, but also some others that have followed the footsteps of Japan to establish their own developmental states. Therefore, before explaining the recent whereabouts of the developmental state theory, some other adopters of Japan's model should be monitored. The most prominent ones were no other than its formal colonies, namely South Korea and Taiwan, who helped the model to be regarded as a geographical model that was the 'East Asian developmental state'. Nonetheless, before starting to count any attributes of the developmental states in South Korea and Taiwan, Japanese colonial rule between the years 1895-1945 should be mentioned as the prerequisite of the subject. The roots of the East Asian developmental state lie in this part of the history as the institutional and physical foundations were built by the bureaucrats of the Japanese empire themselves.

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<sup>9</sup> Japan Post (former Postal Services Agency) was the largest deposit-taking institution in the world with saving and life insurance accounts host a grand sum of over \$3 trillion, meanwhile being the largest employer of Japan with over 400,000 employees.

The interest for colonies in Japan's account was no different from the other colonial empires in the essence. The scarce goods and raw materials at home was to be provided from the overseas colonial establishments in order to maintain the needs of a war economy. The end of high growth in the agricultural sector in Japan arrived in the early 1900s. Population spurt and increase in income levels brought a strong demand to agricultural products, and the supply started to lag behind the market equilibrium (Ho, 1985). As a rapid industrialization was taking place, a need for a larger workforce for was created, thus causing the labor in the agricultural sector shift towards secondary sector. The cultivatable land in Korea and Taiwan pushed Japan to transfer their advanced production techniques to its colonies. Hence, Japan was able to produce rice, without transferring much human or fiscal capital to this sector and being forced into import replacement (ibid).

Following the Japanese invasion, the imperial management started to invest heavily in all sorts of infrastructure (railroads, harbors, roads, warehousing, banking, etc.) so long as the colonial government was in duty (ibid). The death rate declined radically both in Korea and Taiwan, as access to health services and better quality diet was present in both colonies. Primary school enrollment (both Japanese style and regular) saw a dramatic increase in Korea and even a more extended rate in Taiwan. These investments on the human capital of these countries were basically for the aim of achieving a better economic performance in the colonies. The expansion in the education budgets of Korea and Taiwan during the 1930s explain this condition in a much clearer manner. Colonial officials executed a successful reform on the land-tax system to increase the tax flow into the administrative vault. The colonial governments had to generate their own income in general as the central government in Japan avoided allocating resources to the colonies for subsidizing



their economic programs (ibid). This way, the central government authority diffused throughout the entire variables of Korean and Taiwanese economies; hence leaving the government as the single focus of control regarding economic functions. R&D investment on agricultural production was at extraordinary levels, as great effort was put to meet the production needs of mainland Japan.

As Ho (1985) gives a clear picture of the growth figures and patterns of industrialization for the Japanese colonial empire, what is of interest to this research is the robust structural establishment Japan had left behind for its previous colonies that helped them to form their *sui generis* developmental states. Both Park Chung-Hee and Chiang Kai-shek had taken over a state formation that could not have made it easier for their administrations to continue developmental policies. As the similarities of Korean and Taiwanese developmental states will be noted in detail down below, the picture will become more obvious about how deep the Japanese colonialism had imprinted its mark on both states, both in physical and mental regards.

#### 2.1.2 South Korea & Taiwan<sup>10</sup>

Unlike Japan's journey to the *miracle* with a democratic regime, where a single party was dominant enough to provide consistency to the politics, Korea commenced its own 'miracle' via a military coup. The leader of the new regime was major general Park Chung-Hee, who had served as a junior officer in the Japanese Army, thus carried a strong influence and admiration of their former colonizer. Park's coup d'état government did not raise the greatest concern by their US counterpart by the

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<sup>10</sup> While culture is an important aspect to observe when it comes to success stories of Japanese models in East Asia, this research concentrates on industrial policies rather than including an anthropological approach.

way, since their priority was Korea's position regarding Communism regime (Graham, 2003). Japanese colonization had left an established primary education system, a centralized state management, a relatively well-established infrastructure and most importantly destruction of the ancient regime that would hamper industrialization (Amsden, 1992). Öniş (1991) also singles out the immense Japanese influence on Korean developmental state via its colonial rule saying that "Cummings locates the historical origins of East Asian industrialization in the broader regional context of Japanese and then American hegemony. Under Japanese rule, extensive industrial and infrastructural investment provided a base for subsequent industrial growth in Korea. The build-up of the bureaucratic apparatus and the associated administrative capacity were also to a large extent products of Japanese rule" (p. 177). The aggressive industrialization Japan had planned for Korea worked remarkably as the industry, including manufacturing and mining, grew nearly 10 per cent annually during 1910-1940 (Kohli, 1999). Under such available circumstances, Park found no organized large interest group to stand against his nationalist agenda and achieved amazing growth percentages during his rule until 1979. Figure 5 accounts for the high economic growth in Korea during the rule of Park Chung-Hee.

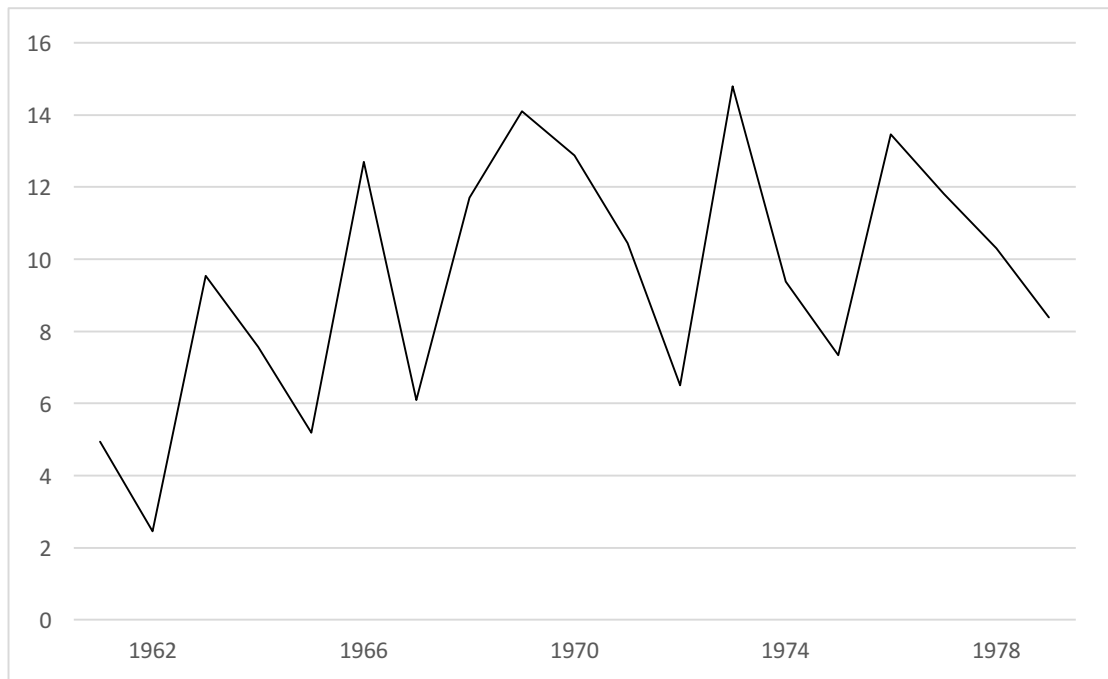


Figure 5. GDP growth figures for South Korea (1961-1979).

Note: Graph generated based on World Bank data.

There are striking similarities between the Japanese and Korean developmental states. Starting with the large diversified business groups, *Chaebols*, can be named as the counterparts of Japanese keiretsu, which are the successors of pre-WWII zaibatsu. These conglomerate type business groups were similarly started and nurtured under direct state tutelage. *Chaebols* nevertheless do not have monopolistic powers, as the state made sure by applying its checks and balances by frequent price controls and having an extensive set of restrictions on the capital account. Investors have been subjected to controls on capital flight and remittance of liquid capital overseas. Until the early 1990's all commercial banks were owned by the state and the bank-based financial sector was given high priority in order to have full control of the economy. Thus, the government was able to prevent rent seeking and encourage the *Chaebols* to accumulate capital for intensive investment. The government also invested heavily in educated human capital accumulation, while

enforcing long-term strategies for heavy industries and technological development (Öniş, 1991). What Japan had done to acquire technology at the beginning of its industrial spurt was a great influence to Korea, just as Germany was to Japan once. Korea got the technology transfer it desperately was looking for from England, the USA and Japan foremost (Amsden, 1992).

After the assassination of President Park in 1979, the US pressure on economic liberalization found more influence on Korea as Kim (2007) argues, “the 1980s marked a developmental course in the transition from the developmental state to state-business coordination and collaboration”. Controlled privatization of the commercial banks was a significant shift in the political circumference of Korea and business environment started discovering their power, such as being able to bargain with the state vis-à-vis their own interests. Although the state did not loosen the constraints for certain, it gradually became a tool for strategic alliance between political and economic actors, as the more market got involved in the decision making process for new investments, the more Korea swayed away from its developmental state policies (Wong, 2004).

Taiwan on the other hand came to significance for the Americans during the 1950's for the PRC's ambitions on the island. The Kuomintang (KMT) led by Chiang Kai-shek fled to Taiwan after losing the civil war against the People's Liberation Army (PLA) under Mao Zedong's command. Martial law was immediately declared, hence commenced the infamous *White Terror*, which was to last about four decades. As much as it may be authoritarian, KMT enjoyed a significant degree of freedom due to the Communist threat that was to be as effective as having a permanent seat at the United Nations Security Council until 1971. Unlike South Korea, it did not have landlordism as a deep-rooted establishment, thus a swift

land reform was executed under American supervision for the human capital to be diverted according to the needs of the new industrial order (Woo-Cumings, 1998). Howe (1996) displays the aftermath of the reform period, as the numbers of the ‘miracle’ show the Taiwanese economy to achieve a growth of 8-10 per cent between the years 1967-90. They were able to attract huge sums of Foreign Direct investment (FDI) from Japan thanks to the Plaza Accord, which became very crucial for the economy for the growth had slowed to an average of 6.4 per cent during 1991-95. In 1995 Taiwan was already the third largest manufacturer of electronic goods, ahead of Germany, and only behind the US and Japan. An important aspect that was imprinted in Taiwan by the colonial rule was that Taiwan became a center of light industries; hence, no extremely large conglomerates could reach presence upon as an investment plan. In 1994 Small and Medium-sized Enterprises (SMEs) summed for 97 per cent of the Taiwanese enterprises. The “big-push” that was initiated by the Japanese rule during 1930s in the aluminum industry quickly found greater support by the American hegemonic agenda of Cold War era and attracted huge amounts of foreign aid and technical assistance for the installation of economic instruments in Taiwanese developmental state. Öniş (1991) meanwhile refers to Wade, telling that he “demonstrates, for example, that Taiwan satisfied Johnson's "bureaucratic autonomy" condition but failed to conform to the "public-private cooperation" condition and in this respect, differed significantly from both Japan and Korea” (p. 118). It is a distinctive quality of the Taiwanese developmental state to have an interconnectedness among politicians, bureaucracy and business elites to a significantly lesser extent than its major counterparts in East Asia are. Similarities and differences of these three paragons of developmental state is a requisite to

comprehend the logic of such a political economy system. Hence, this subject must be monitored closely.

### 2.1.3 Other case studies on developmental state

Although the concept of the developmental state may be peculiar to East Asia geographically, it is essential to seek its roots to Europe and other similar attempts around the world that have not necessarily succeeded in achieving a robust economic development. Loriaux (1999) tries to answer the question if France is a developmental state and eventually argues that France was the paradigm of the developmental state by a short head. He then continues forward assuming the main actor of the developmental state as a state bureaucracy that consist of the best and brightest of a nation, who would not succumb to the “whims of political fortune”. Such a bureaucracy found *Lebensraum* within the hegemonic framework of its time to triumph nationalist developmental elite, when a deadlock fight between Left and Right ideologies was at its pinnacle. The école Nationale d’Administration (ENA) was founded in post WWII era, focusing on administrative sciences and economy, served in a similar way to Tokyo University that supplied the top administrative cadres. ENA only accepts the top-notch French students who are elected through a highly selective exam. The graduates of ENA are almost guaranteed a good position, while young bureaucrats to be appointed to high posts has been common in France. The administrative institutions were imbued with interventionist tools, which were leveraged after WWII to use the large public sector for stimulating industrial growth. The state actively used a supply-side economy policy that served as cheap energy and transportation to private sector. The ratio of firms’ investments in fixed capital to

its value has been significantly higher for the public sector in France, reaching its climax of 54 per cent during the second oil shock (ibid).

In his study about an empirical Latin American developmental state model that covers Brazil and Mexico's *Desarrollista* State, Schneider (1999) summarizes the main reason of failure as the incompetency for achieving an "embedded autonomy" as in the example of Korean state agencies. Evans uses this term to describe the embeddedness of the officials due to their certain ties to a network of industrialists, while on the other hand enjoying a Weberian type bureaucracy. *Desarrollista* bureaucracy is rather described as an 'appointive'<sup>11</sup> one that was obliged to set "long-term relations of trust and reciprocity" (p. 304) with the business circles. Meanwhile a similar problem is logged for the India's failed attempt to form an indigenous developmental state as well. Herring (1999) predicates his comparative analysis on Polanyi's defensive-reaction state and describes how the interventionist government that lacked the rational commitment to planning was bound to fail. The license permit practice, the infamous Quota-Raj, is presented as a perfect case study for displaying the crony type state-business relations that brings about catastrophic discouraging effects on the premature market economy as favoritism was more institutionalized than meritocracy.

## 2.2 Withering away of the developmental state

After the downfall of the Japanese market in 1991, all worries that had been made about Japan's global economic dominance threat was quickly replaced with signs of relief. Krugman (1994) wrote an influential article that is still discussed today, saying there was no 'miracle' at all and in fact they have heard people making similar

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<sup>11</sup> The term 'appointive bureaucracy' is coined by Schneider himself to define the bureaucracy in the observed countries in his article to lack a merit based bureaucracy.

unnecessary fuss about Soviet economy in the 60's, when Khrushchev declared to the world, "we will bury the West" six feet under. What still makes Krugman's article relevant is that he spared China as an exception that is imbued with the capacity to turn the fears to actual truth. Though it is hard to accept the accomplishment of Japan not as a 'miracle', for an unprecedented growth pattern as in table 2, which lasted for almost two decades (1955-1973, 10.2%) (Ishi, 1999) on a high value added production based economy that escalated the East Asian giant to become the second largest economy (until 2010) with one of the highest GDP per capita in the world, not the least a very well established social security system and one of the most equal income distributions. Table 3 displays the Gini coefficients<sup>12</sup> according to World Bank figures for certain developed economies as well as China. Besides all these accomplishments, Japan managed to be, yet one of the largest high technology exporters, as figure 6 accounts for Japan's technology export figures. Why was the developmental state, which was so effective for catching up with the advanced economies of the globe, gradually (voluntarily or not) abandoned in Japan or elsewhere? This is not a question that can simply be explained via endogenous factors, thus exogenous ones have to be analyzed also.

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<sup>12</sup> According to World Bank definition "Gini index measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution... a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality."



Table 2. Global Gross Domestic Product (GDP) Figures for Specific Economies  
(billion US\$)

Year	1960	1965	1970	1975	1980	1985	1990	1995
China	59.18	69.71	91.51	161.16	189.65	307.48	358.97	732.03
Germany			215.02	488.78	946.70	729.76	1,764.97	2,590.50
Japan	44.31	90.95	209.07	512.86	1,086.99	1,384.53	3,103.70	5,333.93
US	543.30	743.70	1075.88	1,688.92	2,862.51	4,346.74	5,979.58	7,664.06

Note: Table is generated based on World Bank data. The time frame is chosen for the years when Japan realized its economic ‘miracle’.

Table 3. Gini Coefficient Comparison Between Japan and Specific Countries (in %)

Year	1989-1991	1993-1994	1999-2000	2004-2005	2008-2010
China	32.43	35.5	39.23	42.48	42.06
Germany	28.61	30.01	29.44	31.5	30.63
France	33	32.4	31.24	31.69	
Japan					32.11
United Kingdom	36.21	36.68	37.96	37.63	38.04
United States	37.58	38.09	40.15	40.57	41.12

Note: Table generated based on World Bank data. Gini coefficient for Japan is only provided for the year 2008. Yet considering the Japanese development to have based on an egalitarian distribution of wealth, this single data is able to provide a retrospective outlook, ranking Japan among Germany and France in terms of socioeconomic equality that are among the best within the developed economies.

As previously mentioned in the beginning of the chapter, there has been three significant breakpoints that functions as an enforcement towards a paradigm shift that is absolute globalism. The first one is the Anglo-American neo-liberal governments, namely Reagan and Thatcher, who extorted neo-liberal ‘free market’ operation in early 1980’s as Woo (2007) puts it:

I shall term these propositions ‘neoliberal’, to signal the bias in favor of free-market and non-interventionist government (or in favor of an arm’s-length relationship between the market and government), and for which the template can be found in the practices of the United States and the United Kingdom circa the era of Ronald Reagan and Margaret Thatcher. Adam Smith can be taken as the original ideologue of this programme, modified for our time by the high priests of the ‘Washington Consensus’. (p. 1)

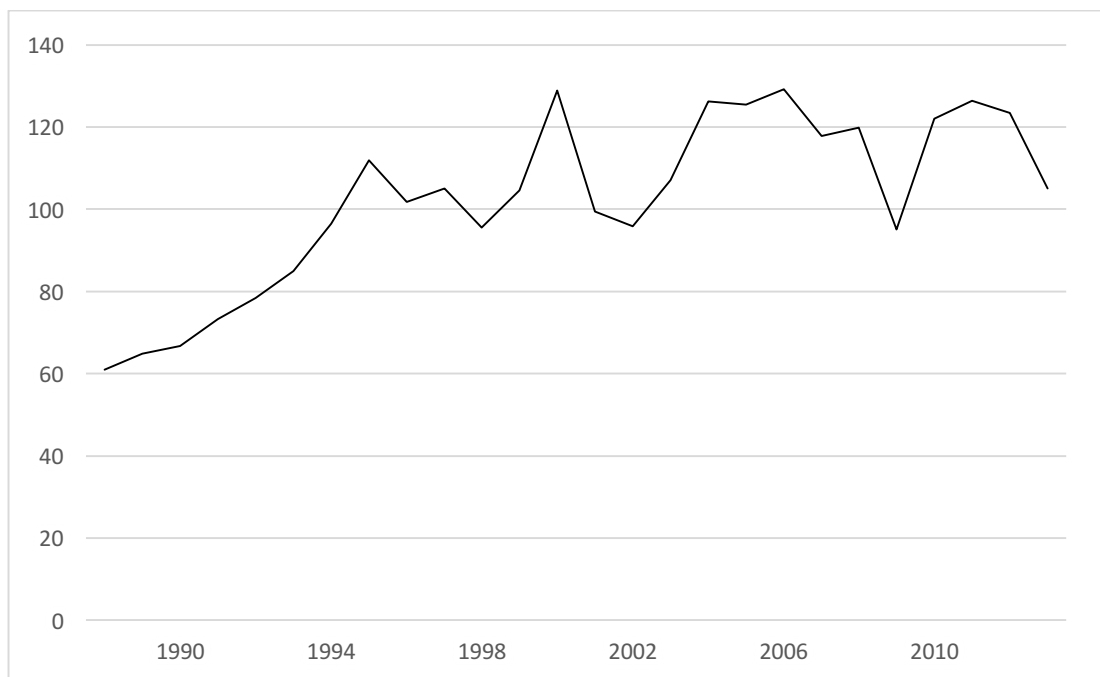


Figure 6. High-tech export figures for Japan (1988-2013, billion US\$).

Note: Graph generated based on World Bank data.

Loraiux (2007) speaks about the same time, when French developmental state had to re-adapt its policies concurrent with the new conjuncture. However, Japan was not as lucky as France was, as they had to sit on the table together with Germany to save the US economy. The pretext of the American side was the trade deficit that could not be reduced on account of US, but Togo (2010) shows that this had just relatively worked in favor of the US trade balance with Japan, as the numbers from 1981 to 1990 in billion dollars were 15.8, 16.7, 19.3, 33.5, 46.2, 55.0, 56.4, 51.8, 49.1, 41.1 and showing a significant increase again in 1993 (59.3) according to the US Commerce Department Statistics.

The early 1980's should not only remind us about the American hegemonic agenda, but also the strong rise of Japan to world economic stage. Japan's constitution banned the country to have a national army, which prevented Japan to

become a military super power. Meanwhile Japan did not hold a permanent seat in the UN Security Council, hence being even more isolated in the international arena. The unfathomable amount of wealth Japanese people and state had accumulated that got bigger by each day seemed like a good opportunity to the triumphant bureaucrats to get what they deserved and have their voices heard globally. This became prominent in the World Bank right at a time when US had started to impose neoliberal economy to the world as the only option other than the command economy. The Japanese side objected, asserting the success of the developmental model they have exported to East Asia and challenged the route for the US to subsume a univocal world order. Wade (1996) clearly presents the actual fiscal might Japan had accomplished by 1980:

Throughout the 1980s, the Japanese state has hugely strengthened its external reach through aid programs and foreign investment. By the early 1980s, it was already the principal co-financier of World Bank loans, the number two shareholder in the Bank's soft loan facility—and the biggest source of bilateral aid for Asia. In 1984, it became the second biggest shareholder in the World Bank after the US. By 1989, it had the biggest bilateral aid program in the world. In 1990 it became the second biggest shareholder in the International Finance Corporation—the Bank's affiliate for private sector lending. In 1992, it became the second biggest shareholder—equal to Germany—in the International Monetary Fund. By the early 1990s Japan passed the US to become the world's biggest manufacturing economy; it accounted for half of the developed world's total net savings—US savings accounted for 5 per cent; and it became the world's biggest source of foreign investment. (p. 6-7)

It is vivid that the developmental state model was winning and Japan was not shy of confronting even the US at this very matter, where they believed to have right. While the voluntary assimilators did not inflict much harm and unwilling ones went through a painful process if they were not significant enough to be handled gently, Japan let the US know about their intention to resist and insist on their own model. One might think the Japanese behavior as threatening, but I believe that Japan's

approach was rational, as they did not want to give up their lucrative position, regarding both domestic and geographical ways, and maybe believed that they could lure the US into sparing Japan for their 'extremely-strategic' partnership. The sad part of the story is that Japan could not foresee what was to come with Plaza Accord and in fact, they learned about the truth just at the time when the second major step of the paradigm shift was taking place that is the fall of the Soviet bloc. What could have been a one-time chance for Japan to dominate entire Asian market, all the way to the doors of Europe, swayed away from their hands for the lack of prudence their unequally successful bureaucrats had exhibited.

Instead, Japan hopelessly initiated an everlasting liberalization process, which harbored an expectation of creating a dynamism that would augment Japan's growth that eventually did not realize and the developmental state was the one that paid for the sins of neo-liberal globalization. What Japan had gained by a brilliant effort in an astoundingly quick fashion was lost in a much quicker one on the table, leaving Japan plunged in a vicious circle of redundant political economies and ended up having the entire nation watch China take their place in only two decades, like a *dejavu* of their once-glorious growth achievement and the word 'miracle' ringed in the ears, reminiscing of a distant memory.

Many lost no time to declare the developmental state's demise for good, called it a sojourn and have drawn up an obituary that replaced it with the 'social capital' concept that World Bank had put as an alternative (Fine, 1999). The developmental state way was cunningly swept off the table and it seemed like the victory of the new paradigm US had championed seemed definitive. Yet, I believe the September 11, 2001 attacks on the World Trade Center towers and Pentagon caught everyone on the wrong foot and initiated the third step of the paradigm shift

that helped ‘globalization’ to accelerate vertiginously as George Bush commenced this new paradigm by saying “You are either with us or against us”. This momentum the American hegemony had gained did not seem like stumbling even for a moment until the 2008 global financial crisis, which raised serious question marks about the globalized market economy model for a long while. Yet the new world order is an unmatched ‘soft’ power that pumps more than \$2 trillion into the world foreign exchange markets on daily basis and not even the most powerful states can stand against a possible speculation against its currency (speculation on Ruble in 2014 stands as a clear-cut example), hence refrain from watching the destruction of its own economic policy (Baylis & Smith & Owens, 2011). Nonetheless the developmental state has no longer been an option for the more recent attempts of catching up as Wade (2003) argues that import substitution industrialization model in the ‘globalization plus’ era has not been working well for the late-comers except China, whom he believes is doing good at both ends by “aggressively exporting in line with changing comparative advantage and aggressively replacing some current imports, following in the footsteps of Japan, Korea and Taiwan” (p. 14-15).

### 2.3 Industrial policies in late development theories

The origin of the term “industrial policy” lies in the post-war Japanese government’s interventionist policies. Itoh *et al.* (1988) gives a holistic definition of industrial policy as: “a set of policies designed for the development of selected industries to increase the welfare of the country and to achieve dynamic comparative advantages for these industries by use of state apparatus in resource allocation” (as cited in Akkemik, 2009, p. 10). The primary goal of industrial policies is to improve the welfare conditions of a nation. Nevertheless, the major developmental efficiency that

came with such policies was merely unprecedented. Underneath this mesmerizing growth and wealth increase that took place in East Asian developmental states in general, can be deemed to lay an equity principle (Kozlu, 2003; as cited in Tiryakioğlu, 2015, p. 54). Nonetheless, the geographic achievements of the concept were colossal even if one takes a cursory look. According to World Bank (1990), industry in East Asia grew by an average of 10.6 per cent annually between 1960-88; hence, keeping a significant margin with the global mean of 6.3 per cent (as cited in Amsden, 1991). Hence, the idea that laid in the kernel of Japanese industrial policies found adopters in a short period time of which took approximately two decades to prove a complete success and thereon, others like Korea, Taiwan and Singapore commenced implementing their own versions. Nevertheless, in Korea and Taiwan, an intense debate until 1980s had still kept its validity regarding the existence of industrial policy (Chang, 1999). Social scientists have offered new conceptualization to this industrialization model, meanwhile revisiting old ones to affiliate the Japanese model through its similarities.

### 2.3.1 Main attributes of industrial policy

Besides the models that receive general acceptance in the global academic discussions, designating the main attributes of the East Asian late industrialization process might as well serve as an outline of general requirements for implementing such policies. Akkemik (2009) underlines the major instruments of industrial policy as follows:

- (1) Competition policy: The allocation of financial resources formed the initial take-off for the competitive markets in East Asia. While the private institutions are known to be extremely large conglomerates like the *keiretsu*

in Japan and *chaebol* in Korea, Taiwan maintained its competition policy via small and medium sized enterprises. State and private sector protected close ties even after the intense liberalization that took place in the 1980s. Rent seeking, therefore, was obviated and a successful rent creation took place instead. A performance based credit allocation was applied in Korea, which took realization of export targets and conformity to such targets set by the government into consideration.

- (2) Trade policy: The early stages of industrialization showed a highly protective trade policy regarding the ‘infant industries’, when government set high tariff rates until these industries gained competitive qualities, meanwhile a concomitant low-tariff rate policy on raw materials and intermediate inputs were present. As the Japanese government acted extremely protective in the early times of their capital-intensive industries such as electronics, machinery and so on, Taiwanese and Korean governments were adopting similar protectionist expedients from the early 1950s on, initially for their traditional labor-intensive industries (food and textiles) and later on promoted relatively more capital intensive export industries with financial and tax incentives. As Taiwan and Japan commenced their import liberalization process from early the 1960s, Korea acted uneasy to carry out such a procedure.
- (3) Tax and financial sector policies: Financial branch of the industrial leap can be counted as the most active side concerning the government-private enterprise relationship. Japan took the following path as the pioneer country:

“(a) establishment of development banks and long-term credit banks to provide long-term capital, at the expense of the discouragement of the development of bond markets; (b) moderate repression of interest rates (therefore avoiding financial repression); and (c) provision of directed credits (i.e., policy loans) to exporting firms.” (Akkemik, 2009, p. 18).

During the preceding years of the industrial development in Japan, large business groups gathered around a so-called “main-bank”, where a substantial amount of capital was served to the advantage of exclusive firms. This system proved itself powerful and successful enough to relieve government efforts from frequent interventions. In Korea and Taiwan, low-interest loans were diverted to strategic industries and this advantageous position was ameliorated with tax privileges combined with the already existing protective measures for nurturing the early-stage evolution of promising enterprises. Both Taiwan and Korea kept promoting the export-led industry with low-interest credits according to the performance of the firms.

- (4) Labor market policies: All advanced East Asian markets have invested in labor training and vocational training from the beginning according to the needs of their industry. Human capital was deployed with an authoritarian manner in Korea, while more suppressive ways were avoided by the means of robust labor-management relations. Japan founded firm labor and wage systems that encouraged the worker to stay loyal and submissive to the company. Overall, labor market policies have also proved successful.
- (5) Technology policies: Although Japan had a significant know-how for basic heavy industries, Korea and Taiwan were not privy to such facilities by the end of WWII, other than the Japanese colonial establishments. Substantial foreign technology transfer was required for all parties to reach global competition levels, hence all governments had to support R&D projects persistently. Since high-tech research projects also involve high amount of risks, it was the government’s duty to encourage the private sector to play an



active part in developing higher value-added products. Meanwhile the World Bank addressed excessive R&D support as causing spillovers.

The importance of R&D came to prominence with the need of producing pioneering technology (third stage of ‘flying geese’ model), after the catch-up process was mostly complete on productive basis (Amsden, 1991). This time span corresponds to the 1980s foremost, when the Taiwanese government, for example, subsidized “joint ventures between private and public firms to focus on high-tech industries and technology transfer to SMEs” (Akkemik, 2009:21). Korean government had promoted large-scale research and development projects prior to the market liberalization it undertook in 1980. The private firms were then matured to point of assuming responsibility for investing further in R&D projects, yet this time not completely eye-to-eye with the government, but rather according to their own interests.

- (6) Foreign Investment Policies: Japan and Korea did not adopt a similar friendly approach to foreign investment as they did to foreign technology transfer. Japan raised the necessary funds to achieve industrial development via main-bank system and internal cross shareholding, while Korea had to choose the pragmatic way and welcome foreign aids, especially from the US that counted up to 15 per cent of national GDP through the mid-1960s. The Korean government, nevertheless, took strict precautionary measures for the utilization of these funds in the fields such as electronics, where the national economy faltered the most, thus a strategic agenda of importing foreign technology for reverse engineering was executed during the catch-up process (as cited in Akkemik, 2009, p. 23; Amsden, 1989). Taiwan on the other hand has assumed a welcoming attitude against the foreign investment. In order to

lure foreign firms into Taiwan, Export Processing Zones (EPZs) have been established, after the US aid ceased to be delivered. These facilities had state-of-the-art infrastructure and the sale of end-products were strictly prohibited in the domestic market. Taiwanese government worked on receiving technology transfer of high-value-added products.

The conceptualization could be made in multiple measures, but such qualities of the East Asian developmental state industrial policies have been commonly present in all success stories. All industrial policies targeted reaching the most advanced state possible that would create the maximum wealth via exports of high-value-added products. The loose outlining of the East Asian industrialization may give the reader a distinct idea about the specifications of such practices, but a more thorough survey of the tangible executive operations should be exhibited in order to offer an in-situ outlook to aforementioned policies.

### 2.3.2 Industrial policies in detail

Since the development process in the post war period has taken several decades, experts have rather separated the timeline into multiple spans. The early development path for Japan is generally taken as the years between 1949 and 1973. Approximately the first half a decade after the war is ignored time to time, due to the idea that this period had past mostly with rebuilding and high growth started to occur in mid-1950s.<sup>13</sup> It is for certain that the high growth figures had plummeted after the first oil shock, but it still took many years for recession to begin. Akkemik (2015) places the time bracket for advanced industrial policies between 1973 and 1995. Although the

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<sup>13</sup> e.g. Yülek (2015) begins from 1953 and takes the next two decades as the high growth era.

bubble economics had started to show its promiscuous effects in the beginning of the decade, it took some years for the government to accept the reality and re-adapt its policies according to the new conjuncture. The approach that is assumed in this part of the dissertation is concerning the policies applied during the developmental era and the transition into neoliberal markets with a vague attempt of creating a symbiosis, we are not very much concerned with the details of ‘modern industrial policies’ that we will compare these advanced economies within their lattermost circumstances. Hence breakdown analysis on the national scale will be omitted; but since the timeframes for ‘developmental, transitional and contemporary stages’ vary by country; there could be no sub-categorization with exact year intervals in a holistic approach, thus leaving the only option with the aforementioned classification method. Notwithstanding the process China has undergone and is still undergoing will, meanwhile, be closely examined in the next chapter; yet a loose comparative analysis will be done to give an insight to the cutting-edge rivalry regarding the East Asian giants.

#### 2.3.2.1 Development stage

The early developmental industrial policies can be thought to have commenced as the Industrial Technology Agency of MITI presented the report named *The State of Our Country's Industrial Technology (Wagakuni Koukougyou Gijutsu no Genjou)* in 1949 in order to disclose the technological circumstances of the time. This report indicates the following precautions to be essential: “

- Updating the technologies in order to ameliorate production quality and control.
- Developing applied research and development activities

- Subsidy and public resource generation by the government for transfer of new technologies and upgrading the existing ones”<sup>14</sup>

The report also focused on contiguous factors such as patents, innovation systems and supporting the academy. It took some time until the 1960s for the private sector to setup their laboratories according to this vista, when MITI was then orchestrating the university-government-industry relations in order to increase operational efficiency of technological policy implementation. See Appendix A for a detailed list of the industrial policies applied in the development stage under MITI's tutelage. This is not surprising once the catastrophic damages inflicted by the Pacific War is taken into consideration, since there is no question that remedying the wounds of the war took considerable time. The first development plan, *Five Year Plan for Economic Independence* (Keizai Jiritsu 5-ka-nen Keikaku), was issued in 1955, which was aiming to achieve complete financial independence and full employment (Komiya & Itoh, 1988, as cited in Yülek, 2015, p. 139). Yamazawa (1990) argues that common sense would without question concur to the policy of importing raw materials to process and export them in the initial stages of industrialization for a country that lacked resources significantly (as cited in Yülek, 2015, p. 139).

Later in the 1960s, MITI started to emphasize projects that involved higher risks and costs. Technology research and development was ensconced in the private sector behavioral pattern and the time for stimulating domestic competition to enhance Japan's economic outlook was thought to have arrived. This might be a prescient step, while Japan cannot be deemed to have caught up with most advanced economies in the latter part of the 1960s yet. Still, the prospective state of

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<sup>14</sup> The translation belongs to me; therefore, I assume responsibility for any possible misunderstanding that might be allowed due to my mistakes.

technological progression should have displayed a possible leveling with the Western conditions in the horizon; hence, the government executed preparatory moves for the next phase of industrial development. Meanwhile Agency of Industrial Science and Technology, AIST that was founded within MITI's structure was entrusted with the task of coordinating the relations between the academies, public and private organizations. The agency was like a database of patents and expertise between all parties so that a highly porous configuration is maintained under state's tutelage. Nonetheless, the increasing tension in the universities during the 60s prevented an environment of full-fledged research and development agenda to be formed (Akkemik, 2015). Concomitantly, Japan came over the foreign trade deficit nuisance, which was one of the start-up goals for the industrial policies to help having achieved. This was very encouraging for the Japanese bureaucrats. An extremely crucial policy the government kept in effect was the fixed exchange rate of a dollar to 360 yen, which gradually became a very valuable due to the difference of inflation rates (Yülek, 2015). Until the 1980's, when Japan became an economic superpower that recorded constant trade surpluses of which only kept getting larger in size against the US, there seemed to be no major nuisance on the American side to pressure the Japanese to appreciate the value of Japanese Yen. Embracing this opportunity, the Japanese government pushed for narrowing the domestic consumption rate in the meantime, thus the import rate plummeted, hence causing the trade balance to shrink and saving rates increased to help the capital accumulation for intense high-tech financing. This formula is regarded to be simple today, but Japan was the first of a generation that pursued such a path, one that ended up in a definitive success.

Reaching global competition levels was the aim of the government from the beginning and the capitalist markets require economies of scale to take part in the

competition. The government of Japan tried to enforce this condition by forcing mergers, which did not mostly turn out to be as much of a success as expected with the exception of Fuji and Yawata Steel's adjoining to form Nippon Steel (Yülek, 2009).

South Korea on the other hand had to leave most of its industrial infrastructure to North Korea after the Korean War (1950 - 1953). Their upside was the expertise cadres that had accumulated substantial experience from the Japanese colonization, but it was not until the beginning of General Park's rule in 1961 that the necessary will for industrial development could be presented. The Korean case is the most peculiar to Japan's regarding the 'flying geese' model and Japanese influence should be counted as an integral variable of Korea's development function, not the least the education of Park Chung-hee under Japanese authorities. Park understood the importance of meritocracy and acted smartly to compromise the corrupt rich-men by first jailing them and bailing them out on condition of concurring with his agenda of financing heavy-industrialization.<sup>15</sup> The Initial plan was aiming six key industries, namely cement, synthetic fiber, electricity, fertilizer, oil refining and iron & steel, but shipbuilding, which Korea had no experience at all, became the priority in the early 1970s. Meanwhile during the 1960s, a qualified working class was formed for the intensive industrial build up that was heavily subsidized in the 70s, when the heavy and petro-chemicals were target industries to be procured with technological knowledge that could cope with the measures of the toughest markets in the globe. These decades served for the learning period and an indefatigable effort for catching-up with the forerunners (Tiryakioğlu, 2015b). The political conjuncture was not exposed to a significant change until the death of

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<sup>15</sup> The prisoners were forced to sign an agreement with the statement: "I will donate all my property when the government requires it for the construction of the nation." Available online at <http://www.bbc.com/news/world-asia-32811866>.

President Park in 1979. Korean industry was closed to foreign investors, and “FDI was discouraged through export requirements, and foreign equity share limits which were strictly enforced by the government. The value added of all foreign affiliates in Korea remained less than two per cent of GDP during the 1980s” (Byun & Wang, 1995, p. 206).

Taiwan’s industrial policy serves another typical case in East Asia, yet differs from Japan and Korea in the manner of accepting foreign investment as stated multiple times in this dissertation previously. Human capital was in intact form after the war, as fertility rates grew higher due to better health conditions demographic outline of the country underwent a radical evolution for the better, as well as the agriculture infrastructure that was present in well-established and modernized conditions to create a market oriented culture at an utmost strategic position regarding trade routes. The colonial legacy also had a significant impact on the foreign capital inflow to the country. FDI sources were mainly Japan and the USA, as for example Japan’s share of inward FDI has stayed over 20 per cent between 1976 and 1994. Technologies were upgraded, thus available circumstances for competition came to presence (Howe, 1996). The competition was mainly provided through small and medium sized enterprises, as globally competitive conglomerates like Japanese *keiretsu* and Korean *cheabol* were not chosen as the state policy for accumulating and utilizing the capital aggressively. This policy came with its downsides, yet the great advantage was obtaining a highly responsive market mechanism against fluctuations, which clearly exhibited its resilient stature during the 1997 East Asian financial crisis with Taiwan being the least effected country in the region; a situation that simply has to be scrutinized carefully.

#### 2.3.2.2 Transition stage

It is hard to speak about a significant transition for Taiwan, as foreign capital was not pushed away with dissent from the beginning. Therefore, the liberalization did not cause for sudden foreign debt torrents that precipitated the foreign and corporate debts, since it did not happen with great haste. This made Taiwan less vulnerable to financial crisis just like Singapore (Shin, 2002). It must be remembered that Taiwan had not mobilized its capital accumulation for extensive industrializing like Korea. Hence, radical measures did not happen to be an integral part of the process once the US came upon the doors of East Asian developmental states, knocking for market deregulation. During the transition period of 1980s unemployment rate in Taiwan fell below 2 per cent and the wages started to increase, while labor-intensive industrialization was being turned into skill-intensive formation. The complications were exacerbated due to speculative markets, when government had hardship to consolidate private investment in particular despite the incentives on export and saving (Howe, 1996). The government was able to tackle the obstacles in front of a harmonious market and orchestrated a healthy environment for further investment. R&D standards had already reached world-class levels in the early 1990s<sup>16</sup>. As a founding of WTO, Taiwan can be taught to have reached the end-point of their transition period from a developmental state into a high value-added export-based economy. Taiwan did not have the means to enforce an ideological loyalty to developmental state model, since she rather happened to make the most out of the conjuncture on most occasions. Even if globalization gained momentum after the 1997 financial crisis and reached an entirely new pitch with 9/11 events, Taiwan can be deemed as one of the most seamless adapters to the new financial order, since it

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<sup>16</sup> Share of R&D personnel in total workforce was 60 per cent of Japan and already more than France in 1991 (Howe, 1996).



avoided a complete open-door financial market liberalization against the foreign capital thanks to the general conditions that allowed them to maintain suchlike policies.

The transition period of Korea starts with the aftermath of President Park's demise in 1979. Under Park Chung-hee, liberalization was not conducted as the deregulation of markets, but rather as the licensing arrangements regarding technology imports. This worked well through the 1980s. However, with the gap between the foreign firms and domestic ones narrowing significantly, technology licensing was reduced starting from the early 1990s due to the reluctance of foreigners to share state-of-the-art technology with the Korean enterprises. Therefore, the government started executing more liberalized technology policies for multinationals in 1993. Prior to this date, national and state-owned firms contributed to higher value-added production through technology spillovers that occurred via foreign direct investment in Export Processing-Zones (EPZs). A major function of the EPZs according to Byun & Wang (1995, p. 210) was that they "allowed the duty-free entry of goods destined for re-export, thus sought to attract 100 per cent foreign-owned subsidiaries that are vertically integrated into the investing firm's marketing and production structure. As a corollary, the zones often had few economic linkages with the domestic economy other than the wage bill, although local procurement had increased over time". EPZs slowly lost their efficacy after the 1970s, but a major success story is the Masan (EPZ) that worked efficiently until 1993 for the FDI contribution regarding technology transfer. Starting from the early 1980s the *Cheabols* started to invest in R&D heavily, which started to pay off its due diligence by producing state-of-the-art memory chips just a few years after. This increased domestic competition, narrowing the market for high-tech foreign firms due to

technological spillovers they had created over time (Byun & Wang, 1995). Meanwhile the governments' developmental industrial policies underwent a quick transformation and relocated the economic bureaucracy's situation from the orchestrator to mediator. The state nevertheless maintained its interventionist facilities intact as Suh (2009) remarks that the government boosted the share of R&D in the budget to 5 per cent during the East Asian financial crisis, when private sector's investments in the information technologies industry had experienced a sudden interruption (as cited in Tiryakioğlu, 2015b, p. 232). The transition era for South Korea may as well be deemed to have ended by the 1997 economic meltdown, which was a clear sign for the eradication of whatever may have been left from the development state regimes that once thrived as miraculous success stories.

After the oil crisis of 1973 and 1979 Japanese economic policies experienced significant structural changes. Likewise, their counterparts Korea and Taiwan, Japan too leaned on improving R&D policies during the 1970s and 1980s. The global energy crisis combined with industrial pollution during this era for the rapid development increased the pressure on the Japanese government to foster more environment friendly and high value added projects (Akkemik, 2015). In the aftermath of the 1970s, the tension in national universities had alleviated and the interaction between the academy and industries had started to gain momentum. Kondo (2009) states that in 1987, the government had initiated funding the establishing of R&D centers for performing joint research projects in the state universities. The number of these facilities increased reasonably to 40 in 1995 to 60 in 2002 (as cited in Akkemik, 2016). Japan's R&D budget in proportion to its GDP meanwhile were below the levels of Western Germany and the USA in 1975. Yet

Japan was able to catch up with her contemporaries by 1990 as all parties had allocated resources as large as 2.8 per cent of their GDPs (Akkemik, 2015).

Even before the bubble economy imploded, the Japanese economy had already gone a long way to liberalize its market, but it was midway through the *Lost Decade* when Japan realized the undeniable necessity to change policies. The absolute defeat of the post-Plaza Accord economic policies was obvious, but accepting the demise of Japanese *miracle* was still to linger for a short notice. The Science and Technology Basic law, which was enacted in 1995 can be taken as the watershed of an era that was renown as ‘conventional industrial policy’, thus can be deduced that innovative approach had become the new pivot for the political framework, which aimed constructing a “Nation Based on the Creation of Science and Technology” (Harayama, 2001; as cited in Akkemik, 2016). This may be attributed to a significant shift concerning the impetus of policymaking, but its effectiveness has been far off its predecessors. Japan could not rescue itself from the refractory stagnation that drove the nation hopelessly to seek salvation in fiscal interventionism together with an ever-mounting liberalization. Unfortunately, none of these worked.

#### 2.3.2.3 The contemporary stage

The industrial policies of recent years in the East Asian countries are no longer ascribable as developmental, since transition into Liberal Market Economies is complete for the countries of the region except for China. What this dissertation intends to show to the reader is the context of what has changed for these countries in general. Japan’s *Lost Decade* is remarkably the most tragic story in between all, as the greatest downfall the world had witnessed in this process was perhaps the

Japanese case. As Gregory (1986) puts it, “virtually all the revolutionary innovations in consumer electronics products ... have come from Japanese industry” since the 1950s (as cited in Shin, 2002, p. 14). Japan had created such an image in the globe, which is a proof of the *miracle*. However, the recession not only startled the highly entrusted bureaucracy, but also kept seeking a growth economy that prevented the industry to sustain its globally pioneering posture (ibid). It can easily be observed that by the time the Japanese state had accepted the defeat of its developmental state model, IT industry had already become the most important part of the high-tech sector and the US had taken the leading position in monopolistic measures. The trivial fiscal adjustments like the recent tax increase for growth stimulation or an everlasting cycle of quantitative easing<sup>17</sup> the Japanese government implements today are irrelevant and redundant vis-à-vis what Google, Microsoft, Apple etc. have accomplished. On the other hand, only ten years ago, desirable domestic products dominated Japan’s cellular phone market and it was not even possible to see a Nokia phone, which was the global cell phone producer of the time. Today half of the smart phone market in Japan is dominated by Apple’s iPhone,<sup>18</sup> which is a clear proof that Japanese companies are faltering at creating desirable products for this market. While smartphones are only a single segment of high-tech end-user products, other electronic markets like laptops, LED television and so on has witnessed the significant prominence Korean and Taiwanese companies, not to mention the latest upswing of the Chinese companies have made these markets even tougher mostly for Japan.

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<sup>17</sup> Japan’s economy shrank by 7.1 per cent in second half of 2014, after increasing the Value Added Tax from 5 per cent to 8 per cent. Bank of Japan also promised to apply shock therapy in 2013 by injecting 1.4 trillion US dollars in less than two years. The main purpose overall was to reach 2 per cent inflation and end the two decade of stagnation.

<sup>18</sup> iPhone’s share in the last quarter of 2014 has reached 51%, while Sony had the second highest share with 17%.

Korea meanwhile has created winners in the electronic goods market and the automotive industry. Traditional industries such as ship building and steel has been also maintained, but the recent dominance in the electronic goods skyrocketed Korean exports in the second half of 2000s to help the country become the 5<sup>th</sup> largest export economy slightly behind Japan<sup>19</sup>. Taiwan on the other hand could not create such giant firms, nor did they intend to, but still managed to generate global brands and became a major player in the consumer electronics market. Taiwanese exports did not expand as much as the Korean figures during the last decade, but rather saw a consistent rise, eventually making it another major exporter of East Asia. Both Korea and Taiwan have reached the wealth level of Japan and increased their exports to top ranks, concomitantly creating global brands. Nevertheless, Japan makes a more interesting case overall, being the side to plunge into an unprecedented recession following the greatest economic achievements of the 20<sup>th</sup> century. One should not forget for the most recent about the Fukushima earthquake, which has inflicted catastrophic damages to Japanese economy alongside its society and environment, including the shutting down of the nuclear power plants nation-wide that ended up creating large trade deficits caused by energy imports, hence led and still leading the Japanese government to gradually push for the reopening of the nuclear power plants in Japan. Nevertheless, the failure of the belief that domestic consumption of a population over 120 million people would stimulate an acceptable growth has perhaps become the most salient and dreary case study of modern times for developmental economics.

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<sup>19</sup> 2015 estimated exports for Japan and South Korea are respectively, 624 billion and 535.5 billion US dollars. Taiwan, meanwhile exported \$284.9 billion worth of goods.

## CHAPTER 3

### ECONOMIC GROWTH IN CHINA

This chapter intends to present a brief historical background of Chinese economic development, to see the major events and policy changes in the course following Mao Zedong's demise. The communist inheritance of the Deng Xiaoping leadership and the transformation that was introduced to the Chinese economy will be defined through the remarkable events. This brief historical outline will be linked to a political economy interpretation that will explain the institutions, dynamics and policies that constitute the Chinese developmental state. The literature regarding the sources of high economic growth will be presented in detail and a comparative analysis will elaborate the Chinese developmental state vis-à-vis the previous East Asian experiences. The main question will be about having a better understanding whether the 'Developmental State' is still alive or dead within the scope of this chapter. Nevertheless, a concise background of the next chapter will be presented in order to bring a numerical perspective to the current conditions of China's developmental policies through intersectoral interactions. Meanwhile, since the development process of People's Republic of China (PRC) is still ongoing, recent events will also be of interest to provide an insight to the current stage of development. This discussion will be mostly on a global scale, taking the contemporary magnitude of the topic into account. Therefore, the comparative analysis will be done vis-à-vis the US and Japan rather than the geographical proximity assumed in the previous chapter.

Modern history had not witnessed an economic growth and industrialization process such as Japan had gone through between the early 1950s and 1970s, until China started to 'open up' its economy in the late 1970s. The development process

that ensued generated nearly an average growth rate in double digits for three decades that still keeps its pace at 7.7 per cent in 2013 (China Statistical Yearbook, 2014). Political economists might recall the 1980s Japan once they observe contemporary Chinese economy. It appears to have significant similarities with the process of economic growth of the Japanese developmental state and the other East Asian late-developers had lived through notwithstanding; therefore, overlapping occurrences with the ‘miracle’ as described in the previous chapter are present in certain ways. Nevertheless, China has yet to do excessive amount of work in order to reach the wealth levels of which Japan and other East Asian counterparts have achieved decades ago. While this course will still take extensive amount of time (if it ever will), China has already become the second largest economy of the world and stands far ahead of Japan, which she levelled with only in 2009.<sup>20</sup> Under the current circumstances, the pressure inevitably rises on the shoulders of the single global superpower, namely the United States, to champion her position as the steadfast hegemony in economic measures. This final snatch is most likely to feature a protracted currency war at the ultimate resort so long will the rivalry remain one between two soft-powers.

Being the last nation to push for a catch-up, China has been riveting huge attention from the academic world at an astounding level, yet the amazing accomplishments that has been realized by the ‘Middle Kingdom’ has not received the best interest of the Western intellectuals. Despite the fact that China has been consistently growing in a peaceful way that attentively abstains from major confrontations with other super-powers, today’s condition present itself as a possible hegemonic competition between the US and China have become extremely close

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<sup>20</sup> According to World Bank data, Japan and China had \$5.035 and \$5.059 trillion nominal GDPs in 2009 respectively.

economic partners not only with each other, but also with Japan.<sup>21</sup> It is understood that the unipolar world had undisputedly triumphed with the collapse of the Soviet Union, while Japan was concomitantly eliminated from presenting a strong option to the developing world in the aftermath of Plaza Accord. Although Krugman (1994) indicated the case of China as an exception, the aftermath of 9/11 events seemed like a clear victory for the reign of globalization. I believe that the hodgepodge ramifications that ensued proved the certainty of undisputed US hegemony wrong. China found an exceptional intermission during this period that allowed it to prosper considerably, when the US plunged deep into the Iraq and Afghanistan wars, those of which may very well be deemed as an equivalent of the Vietnam War during the Cold War era. To climb the ladder of development, China embraced this unique chance, while receiving significantly less attention than she deserved for her high-growth performance. The situation exacerbated severely, when the US exported to the whole world a financial crisis in 2008 that did not pass by tangentially to any country other than the scarcest exceptions such as PRC, who presented itself to the developed world as a life buoy; hence gaining a favorable reputation righteously. As the neo-liberal globalization block, which was led by the US was showing staggering effects, China was climbing the development ladder quickly, while showing no signs of slowing down. This situation immediately found itself as the hottest topic for all segments of the discussion regarding US hegemony. As it happens to be an economic growth process that ignored military development that remained relatively insignificance until recently, it is very proximate to the debates circumventing Japan's rise to global stage as an economic superpower in the 1980s (yet at a much greater magnitude). Researchers such as Barry Naughton have concentrated their

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<sup>21</sup> China is the greatest trade partner with the US and Japan, while all three are the top two trade partners of each other according to the Observatory of Economic Complexity. Database available online at <https://atlas.media.mit.edu/en/>.



work on the field of economics in various segments in order to investigate the episode that might not ever occur once more.

### 3.1 The historical background of Chinese economic growth

History of PRC's growth process is an integral element for understanding China's current day position. Transformation from a communist ideology into an ambiguously capitalist one is the major paradigm shift PRC had undergone, but there are other prime events that must be considered before trying to obtain a holistic view on China's transition. Throughout the entire process, two things are certain to have taken place, namely change and control over every attribute of the Chinese society, while economic development being the main drive of the new regime. Since both qualities were always forced into a coexistence in a top-down manner, this case can be entitled as a 'controlled-transformation' regarding its every step. Although there have been times of faltering, since abandoning the collective market ideology, there is an undeniable success to the realization of this control mechanism.

China's growth can be sorted by the tenure of Chinese Communist Party (CCP) leaders. This has been more obvious during the Mao Zedong and Deng Xiaoping eras, as both names were *Long March* veterans, who had undisputed hierarchical supremacy in the party. Nevertheless, the two periods should be distinguished from each other, since CCP was a 'personality-ruled party' that turned into "a system governed by rules, clear lines of authority, and collective decision making institutions" according to Shirk (1993) (Xu, 2011; as cited in Brandt, Ma & Rawski, 2014, p. 95). In the following years, the power succession in the Politburo became more institutionalized, while the leadership became concurrently more economist and technocrat oriented, who were highly possessive of managerial skills and less

involved with the People's Liberation Army (PLA) (Mohanty, 1998). This has led to a more consensus-based decision mechanism that relied on a greater academic and technical knowledge, helping the country to maintain high growth for unprecedentedly long periods. For this reason, the Maoist legacy will be loosely exhibited, to be continued by Deng Xiaoping era's history of growth policies. Macroeconomic outcomes and the industrialization through this time span will be examined closely. This will be followed by China's accession to WTO in 2001, which helped the skyrocketing trade volume, which helped PRC become the 'factory of the world' and an undisputable economic powerhouse. China has gradually made its way to the far-reaching top spot ever since, which might drag the globe into a unique dichotomy that I would like to call re-bipolarization within globalization.

### 3.1.1 Inheritance from the Maoist regime

Leaving behind an unmatched legacy, Mao Zedong passed away in 1976. By this time People's Republic of China was organized as a socialist economy, yet the only thing that was absolute about it was that it was not capitalist with utilization of the resources and capital far below its potential. Yet, until the last decade of Mao's 'protracted' rule, he was able to maintain peace and stability across the nation in one way or another with few exceptions, one of them being the 'Great Leap Famine' that ended up taking the lives of tens of millions (Perry and Wong, 1985)<sup>22</sup>. Nevertheless, the major erroneous period that caused the succeeding generation of leaders to decide on a radical departure from the Maoist legacy can be deemed as the 'Cultural Revolution', when the important leaders of the CCP were humiliated. This created a

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<sup>22</sup> The estimated figure to the death toll is highly controversial. However, the fact that it happened in tens of millions is undisputable as no source claims the opposite.

situation that left the leadership of the CCP in a vague situation, while the society had suffered a tumultuous devastation in general (ibid).

By the end of the Mao Zedong era, the labor market in China was out of equilibrium due to the strict prohibition of labor mobility. A significant surplus in the rural areas were in presence, whereas urban industries were short of workers hence, an imbalance in wages had naturally been taking place. Setting labor mobility free was one of the urgent policies implemented by the new government by the year 1980 (Seeborg, Jin and Zhu, 2000) in order to reset the labor-market equilibrium back in order by initiating torrents of workers from agricultural sector to the secondary sector (manufacturing and energy). This procedure was expected to show its effect by boosting total output in a short span of time (Bramall, 2000). World Bank (1996) supports this view in a report by demonstrating that 1 percentage point out of the 10.2 per cent GDP growth of China between 1985 and 1994 was due to such abundance of labor. Meanwhile Sachs and Woo (1997) had come up with a similar figure of 1.1 percentage between the years 1979 and 1993, when the GDP growth rate was calculated to have taken place at an annual rate of 9.3 per cent (as cited in Bramall, 2000, p.127).

Looking at the achievements during Mao Zedong's administration is crucial to understand the inheritance assumed by its successor. A strong state-owned enterprise network was set up to achieve industrialization. The numbers overtly display the pivotal role the state enterprises were imbued with, starting from the early stages of the Maoist regime, as Brandt, Ma & Rawski (2014) show that "the number of industrial enterprises increased from 125,000 to 348,000, output rose by a factor of 10, and factory employment expanded from 5.9 to 61 million workers. In 1978, state-owned enterprises contributed 77.6 per cent of industrial production, with the

remainder coming from collective firms, most controlled by local governments or state-owned firms”.<sup>23</sup> Agriculture saw a remarkable development as the entire nation was encompassed with an irrigation system during Maoist regime. The previous agricultural infrastructure had been destroyed together with other infrastructure and production means during the long years of civil war and the Japanese invasion between 1938-1945. The communist regime transformed China far beyond the circumstances that were present in 1949. During three decades of Maoist industrialization, the share of industrial output in GNP had reached up to 45 per cent, from only 17 per cent in 1952 (ZGTJNJ, 1992; Liu and Yeh, 1965; Yeh, 1979; as cited in Bramall, 2000, p. 32). Besides the newly installed irrigation systems, factories, machinery plants, impressive transportation networks as well as far reaching primary and secondary education were also established in a matter of years. Beginning from 1964, a domestic high-yielding rice-seed was developed, while accompanied with massive investments in chemical-fertilizers and farm-machinery (Perry and Wong, 1985). Bramall (2000) displays extensively how the Third Front military industrialization process that was initiated after 1964 had depressed domestic consumption alongside allocating the resources that could have been spared for growth were buried into the frantic armament spending to counter Soviet and American threats. During this process, the urban sector wages literally saw no increase between 1963 and 1977 (Perry and Wong, 1985). Nevertheless, this period created a major technical expertise and helped some regions benefit from the industrial spurt. This perspective in general asserts that the economic and social development was not malign, but it was rather growth, which did not occur until post-1978 years due to differences in ideological approaches to development.

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<sup>23</sup> Data originally cited from Chen (1967, pp. 182, 475).

Therefore, underestimating the achievements of Maoist regime would be misleading, when one tries to interpret the history of Chinese economic development. Finally, and most importantly, the CCP administration under Deng's leadership had also taken over a fairly well educated society although the educational gains of the Maoist era were significantly eroded through the Cultural Revolution (Bramall, 2000) and a significantly small amount of international debt nonetheless that worked a great deal to their advantage.

One of the least favorable outcomes of Maoist legacy on its successor's account was the *Shangshan Xiaxiang* policy of sending away the intellectuals to the countryside during the Cultural Revolution that had caused massive skill loss. This set a major drawback to statistical data collection and interpretation by expert economists, due to the shutting down of vital institutes (Nolan, 1995; as cited in Bramall, 2000, p. 128). The ultimate outcome of the 'Cultural Revolution' at the end of the Maoist era left a defunct, crippled and underutilized capital stock to its successor, which was in no better condition than the decomposing Soviet Union of the late 1980s. Moreover, the Deng Xiaoping administration could not possibly have inherited a state in more unbecoming terms according to the new regime's political economy vision of nurturing economic growth via strengthening the forces of productions. Bramall (2000: 130-131) states that "the official approach adopted by the Party since 1978 argues that the late Maoist economy (that is, the post-1957 Chinese economy) signally failed to develop the *forces of production*. Meanwhile it rather placed too much emphasis on politics (*politics in command*) and neglected the incentive systems needed to effectively develop and utilize the forces of production". However, if one looks at the bright side of the story, it is very logical to argue that the early development undergone in the post-Mao period between 1978 and 1984

came as no surprise. This period was a product of maximizing the utilization of existing resources that gained time to the new regime for implementing a new set of policies for growth retarding via conducting regional experiments to find more reliable methods of development.

### 3.1.2 Post-1978 era: The triumph of pragmatism

Deng Xiaoping was finally able to assume power at the top of the party in December 1978, when the 3<sup>rd</sup> Plenum of 11<sup>th</sup> Central Committee of the CCP decided to get rid of the *Gang of Four* that had become possibly the most notorious clique in the history of the country. In 1979, the National Congress came to agreement that class struggle would no longer be taken as the central focus of the party, as it had been during the Cultural Revolution, hence enabling the officials to shift their concentration to issues concerning the economy. One of the first operations executed by the new leadership was the *recentralization* of authority through 1978-79, financial jurisdiction being the priority (Naughton, 1985). Meanwhile, China was still an agrarian society in the late 1970s and the new policy adopted by the Deng administration allowed reallocation of labor and capital and caused major shifts in the agricultural work force; hence requiring increased productivity rates in the agricultural sector. Decollectivization of rural workforce was the initial step of the process as previously mentioned and local experimental operations were commenced in Anhui and Sichuan provinces, as Sichuan was also chosen for industrial reform, where a number of state-owned factories were given financial autonomy (Bramall, 2009, p. 13; Brandt, Ma & Rawski, 2014, p. 96). The aging irrigation system lagged behind the needs of modern agriculture, yet the yield rates were already high thanks to the achievements during Mao years, hence; new investment was required in

abundance in order to increase productivity significantly (Peery and Wong, 1985; Bramall, 2000). Nevertheless, this did not hold the government back from introducing new policies. Perhaps the most important agricultural policy that happened to be one of the most radical changes was the *household responsibility system*, which was introduced in 1979 and initiated a performance based contract practice in order to promote a more motivated and ambitious rural production (Bramall, 2000; Putterman, 1995; Perry and Wong, 1985).

The initial years of the post-Mao era staged an arm wrestling between the more conservative ‘Readjusters’<sup>24</sup> and the reformists who believed in market-based price determination and exercising privatization to an experimental degree. Chen Yun, the most important figure of the conservative camp, devoted great importance to planned economy and championed the combination of planning with market adjustment. He resigned from his post in the politburo in 1982, which caused serious query about his health condition, but continued his service as the Chairman of Central Advisory Commission (Bachman, 1986). Chen was a prominent name for economic affairs; therefore, his opinion had great impact on the party, including Deng Xiaoping himself. He was very sceptic about an unharnessed rapid economic growth and his clear vision on macroeconomic issues transcended through generations of CCP leadership. But the ignorance he displayed regarding the microeconomic perspective that is the integral role incentives play in the markets was the main difference he had with Deng (Naughton, 1993), who had a unique pragmatic mind that blended his rehabilitation experiences from the Cultural Revolution period with his long tenure in the CCP at all levels. Deng trusted the conservative vision in the early stages of reform, yet the ‘readjustment’ policies gave heartbreaking results as the growth of

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<sup>24</sup> Readjusters were opposed to both rapid and extensive privatization and undermining the importance of planning by marketization. Notable names of this group are Chen Yun, Li Xiannian, Peng Zhen, Wang Zhen, Bo Yibo, Deng Liqun, Hu Qiaomu, and Yao Yilin (Bramall, 2000, p. 13).

heavy industrial gross output fell to 2 per cent in 1980 from 16 per cent in 1978 and followed by a shrink of 5 per cent in 1981. Although the light industry growth rate stayed over 10 per cent over the same period, overall industrial growth happened at a debacle rate of 1.7 per cent in 1981, which briefly picked up the succeeding year with 5.7 per cent (ZGTJNJ, 1992; as cited in Bramall, 2000, p. 29). On the other hand, Zhao Ziyang was an ardent reformist, who enjoyed great deal of support from Deng Xiaoping as the Premier of CCP and stood as an influential character for the 'reform' faction<sup>25</sup>. From early 1981 until 1988, Zhao had the strings of economic matters in general, yet it was only after 1984 that the reform supporters outstripped the others. Rural industry presented the early positive results for the reformist wing; as the output increased in average of 15.2 per cent between 1983-1990 that seemed more promising vis-à-vis the 10.7 per cent rise since 1978. Yet both figures fail to reach the remarkable level of 34.5 per cent during the period between 1990-94. Meanwhile, Chinese government knew that private sector could be stimulated via flexibility and incentives imposed upon the state-enterprises that could take initiatives to disseminate the increment in productivity and competition throughout the entire market. Through this mindset, private industry was able to bring about a substantial increase in the total labor force from 6.9 million to 25.6 million workers between 1985-94 and display a high potential profile (ZGGYJJTJNJ, 1990:407; ZGTJNJ, 1995:407<sup>26</sup>; as cited in Bramall, 2000, p. 33). Once and for all, the early chapter of reform in China prioritized rebalancing the equilibrium in capital markets and adopted a tryout strategy with theories from a differing ideological spectrum within the party.

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<sup>25</sup> This faction championed a market-based price determination and some degree of privatization). Other prominent names of this faction are Hu Yaobang, Wan Li and Hu Qili (Bramall, 2000, p. 13).

<sup>26</sup> ZGGYJJTJNJ, 1990 is China Industrial Economy Statistical Yearbook 1990 and ZGTJNJ, 1995 is China Statistical Yearbook 1995.



Bramall (2000) displays the performance regarding growth China had designated to achieve during the first one and a half decades of transition period brought its results right away with 9.9 per cent average GDP growth although there is a controversial discussion that the numbers were rather heaved.<sup>27</sup> The GDP growth rates decreased at the end of the 1980s dramatically, but this is mostly because of the mistakes in macroeconomic policy and the impacts of Tiananmen events to a lesser extent. Nevertheless, when the growth rates are compared to the crumbling Soviet economies, China stands as an extraordinary success story, still “China’s per capita growth rate of 4.1 per cent between 1978 and 1992 was significantly less than the rates achieved by Taiwan, South Korea and Japan at a comparable stage of their industrialization” (Bramall, 2000, p. 20). Table 4 provides the data for a vivid comparison vis-à-vis the USA.

Table 4. Levels and Growth Rates of GDP Per Capita at PPP for Late Industrializers and the USA.

Country	Year	Real GDP per capita relative to USA (USA=100)	Growth of GDP per capita (per cent p.a.)
China	1978	5.3	
	1992	8.3	4.1 (1978-1992)
Taiwan	1953	11.1	6.1 (1953-1990)
S. Korea	1960	9.1	7.1 (1960-1991)
Japan	1950	16.3	7.2 (1950-1980)

Note: Estimates of GDP per capita and per capita growth rates are at 1985 prices and at purchasing-power parity.

Source: As cited in Bramall (2000), *Perm World Tables*, version 5.6 (1995).

<sup>27</sup> Bramall (2000) compares the GDP figures with Net Domestic Material Product (NDMP) numbers that was a socialist growth accounting method, equivalent to Gross Domestic Product (GDP) system of the United Nations. NDMP growth rates are given as 8.8 per cent for the same period. Meanwhile many other scholars have calculated GDP growth rates according to their data, which has ended up in different results, generally indicating smaller growth figures.

An important part of the early reform period was the building of Special Economic Zones (SEZs), which were modelled after the Export Processing Zones (EPZs) in Korea and Taiwan that had apparently proved to be great success projects for attracting FDI and developing the export-based industries (Ota, 2003). The idea to replicate this model initially came from the official of Guangdong province in 1979 (Xu, 2011), therefore, the first four special economic zones were naturally set up to take place in Guangdong alongside another experimental province, Fujian (Meisner, 1996). As the numbers of SEZs swelled after 1985, the success of Shenzhen in attracting FDI was heavily commercialized by Zhao Ziyang administration for getting better reception for their policies, although Meisner (1996) asserts that this “success” is fairly exaggerated. After 1985, the economic motion of the SEZs came under firm investigation, which showed that the officials in these provinces had overlooked the distorted reports regarding the capital generated in these districts. The developmental purpose of technology transfer had not materialized and “the zones had developed into trade and transshipment centers, flooding the domestic markets with duty-free consumer goods manufactured abroad” (Meisner, 1996, p. 279).

A crucial political economy instrument adopted by the government during the early phases of development was the *dual-track price system*. SOE’s were thus enabled to sell their products in the open-market after fulfilling their preset quotas. Market prices were naturally higher than quota prices. The collateral effect of this policy was to give the Township and Village Enterprises (TVEs) that constituted the rural industries to access the domestic market as a whole for the first time that helped these enterprises to thrive. Another important agent of this policy was the dual exchange rate applied between 1984-1994 that brought Pareto improvements to

China according to Lau, Qian, and Roland (2000) (as cited in Yao, 2009; p. 11).

Nevertheless, it had its downsides as it opened much space for rent seeking as “enterprises and government officials who controlled the quotas could easily get rich by selling their quotas to other enterprises and individuals” (Yao, 2009; p. 11). This caused serious discontent between the Chinese people by the end of the 1980s and CCP had to withdraw the system without facing more anguish from the public.

As the reform policies failed to achieve their *raison d’etre* of progress in establishing value-added production facilities, the ground beneath the feet of the reformists started to subside, which was exacerbated by the fall of the Soviet bloc, and the increasingly corrupt posture of the reformist leaders. These developments gave the impression to the Chinese people that the reform block was the culprit for the faltering in social justice, as the anger culminated into an ultimate result that happened to be perhaps the most important challenge to the new paradigm: The Tiananmen Square protests in April 1989. The predicament that surrounded governance to either embrace more liberal-market policies or stick to conservative measures for contingency had created a severe disturbance in society that especially spread to university circles and challenged the legitimacy of the Deng Xiaoping administration, although the same circles had embraced with arms wide open just a decade ago. The bloody crushing of the protests saved the regime and put a halt to legitimacy discussions temporarily. However, the CCP captainship led by Deng Xiaoping understood that the reformist approach had failed to solve the severe socio-economic imbalances in the society. The reason to this problem was mainly “the drag on an increasingly liberalized economy arising from bloated, plodding, and inefficient state-owned enterprises burdened with surplus workers, weak management, lax labor and financial discipline, rising losses, and overdue debts”

(Brandt, Ma & Rawski, 2014, p. 100). Industrial production in the rural enterprises took a substantial hit between 1988-90, dramatically leaving two million private companies out of business in the first half of 1989 (Bramall, 2000, p. 30). The ‘reform’ was faltering and the economy was in absolute need to realign along with its cadres. Deng Xiaoping himself initiated the emancipation process, as he resigned from his post in CCP, which was ensued by Southern Tour (*nanxun*) in Spring 1992 that aimed to “rehabilitate the reform agenda and dissipate investor uncertainty created by economic retrenchment after the 1989 Tiananmen debacle” (Naughton, 2007, p. 403). Meanwhile the careers of the liberal party officials, foremost Zhao Ziyang, were also sacrificed during this period (Chandra, 1997) in order to reinsure the party’s legitimacy before the masses and restoring *gemeinschaft* within the party.

These events culminated into CCP’s 1992 vision of achieving a “socialist market economy”, as the famous slogan of the 1980s that is “crossing the river by groping the stones” was abandoned, the new ‘normal’ required initiation of a more radical enterprise reform for activating an economy of dual structure (Baek, 2007; Brandt, Ma & Rawski, 2014; Bramall, 2000). The new set of policies that were kick started with the 14<sup>th</sup> Central Committee of CCP and started giving results almost immediately as the growth rates during 1992-1994 were 14.2, 14.0 and 13.1 per cent respectively.<sup>28</sup> However, the fundamental outcome was the outburst of FDI inflow, which initially saw a significant increase in 1992 to reach \$11 billion level, had closed to the \$44 billion mark by 1997 (according to World Bank data)<sup>29</sup>. The open door policy that had indeed become gradually more effective over the years could not be reversed, but the re-centralization of capital flow was necessary.

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<sup>28</sup> Data are obtained from the World Bank.

<sup>29</sup> Different databases can introduce significantly different figures. For example, the World Bank and United Nations Conference on Trade and Development (UNCTAD) databases sporadically present give substantially different numbers regarding the net FDI inflow.

The 14<sup>th</sup> CCP Congress in November 1992 led to the triumph of a new set of reform initiatives led by Premier Zhu Rongji. As this can be deemed as the epilogue of Deng Xiaoping era, an elderly party official Chen Yun, who was a prominent economist and the leading image of the Party's conservative wing, had reemerged with his abstaining approach to liberalization that is to adapt a market reform under state tutelage. Major decisions from the congress were concerning the fortification of central financial strength, substantial privatization and laying off the redundant workers in the state sector, strengthening the central bank and increasing the central control on the allocation of funds etc. (Brandt, Ma & Rawski, 2014). This congregation marked itself as a clear manifestation of the new route of CCP's political economy for development. The new policies quickly started to show clear results, as China became the world's largest steel producer in 1996 with 100 million tons of production (Bramall, 2000)<sup>30</sup>. Deng Xiaoping left the stage for a new administration under the leadership of Jiang Zemin, a successor who had his best interest at heart for the new program, and took a more passive position until his death in 1997. During his tenure, China's economy transformed into a production based economy, while poverty in rural areas was significantly reduced from 250 million people in 1978 to 65 million by the end of 1995 (Chandra, 1997). Deng's character should be remembered for his impact on pragmatism, not interventionism. Deng would most probably have thought that interventionism is non-pragmatic, since he himself was not an expert on economic affairs. Thus, his direct involvement on shaping the economic policies in his 15 years of tenure does not exceed four or five instances (Naughton, 1993). This mindset carved its mark deep upon the next

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<sup>30</sup> China's steel production by years 1967, 1980, 1990, 2000 and from 2007 to 2015 annually is respectively 14, 37.1, 66.35, 128.5, 494.9, 500.3, 573.6, 626.7, 683.3, 724.7, 779.0, 822.7, 803.83 million metric tons according to World Steel Association data.

generation of leaders, who inherited a staunch state structure that could convey its concentration on economic development.

### 3.1.3 Post-Deng era, accession to WTO and global prominence

China was able to mend its flaws in the second half of 1990s. State-owned enterprises (SOEs from here on) had formed a hunchback on the national economy during the reform period, which was more than a good reason to worry about the future of the Chinese economy, as they were the main girder of the industry, holding the productive facilities of the country in monopolistic measures. In 1995, the Fifth Plenum of the Fourteenth Central Committee of the CCP was held, when the policy of "grasp the large and release the small" was adopted to bring a fundamental change to state's approach to the possession of commanding measures in the economy and the SOEs which were designated to be less efficient and minor importance to China's future strategies were quickly privatized. The ensuing Fifteenth Central Committee of the CCP in 1999 designated "the medium and large-scale high-technology industry as well as the security-related sector ... among SOEs as strategic sectors of vital importance" (Baek, 2007, p. 488). Nevertheless, the opening eased the hurdles before foreign investment as the share of gross industrial output by Foreign-invested enterprises reached 29.3 per cent in 2002, from only 1.2 per cent in 1985. Concomitantly, the share of state-owned industry decreased dramatically regarding employment as well as the share of output. 28.9 per cent of the employees in urban areas in 2002, which were employed by SOEs, whereas the corresponding figure in 1992 was a massive 69.7 per cent (Baek, 2007).

The political corrections of the shortcomings of the previous reform period had created a healthy environment for a growth spurt, but the big piece of this political

economy function was yet to come. China had applied to rejoin the General Agreement on Trade and Tariffs (GATT) in 1986, which was not expected to be a painful process. Yet with the collapse of the Soviet Union, the world trade was on the verges of radical changes. After the decision to establish the WTO in 1994 the Uruguay Round, the globalization of trade did not tolerate strict barriers anymore. Meanwhile China had become a major export power with high tariff rates that did not meet the WTO conditions by any measure. Knowing the opportunity of joining the organization would make China the production base of the world and one of the strongest export countries in the globe, reforms were already being executed by the CCP. An example is that “a significant tariff reform in October 1997 reduced the rates well below 20 per cent and ... the number of tariff lines subject to quotas and licenses fell from 1247 in 1992 to 261 in 1999” (Ianchovichina & Martin, 2004, p. 8-9). Table 5 displays the dramatic reductions in tariff rates, which showed the intentions of China to demonstrate a firmer posture for the membership negotiations. Yet the highly closed market China had drawn critical attention from multinational companies that sought penetration, hence an excessively complicated bargaining process took stage, which ultimately granted, “broader and fairer access to Chinese economy in exchange for greater access for its light manufacturing exports to other countries” (Naughton, 2007, p. 390).

Table 5. China's Average Statutory Tariff Rates (%).

	All products		Primary products		Manufacturers	
Year	Simple	Weighted	Simple	Weighted	Simple	Weighted
1992	42.9	40.6	36.2	22.3	44.9	46.5
1993	39.9	38.4	33.3	20.9	41.8	44.0
1994	36.3	35.5	32.1	19.6	37.6	40.6
1996	23.6	22.6	25.4	20.0	23.1	23.2
1997	17.6	18.2	17.9	20.0	17.5	17.8
1998	17.5	18.7	17.9	20.0	17.4	18.5
1999	17.2	14.2	21.8	21.8	16.8	13.4
2000	17.0	14.1	22.4	19.5	16.6	13.3
2001	16.6	12	21.6	17.7	16.2	13.0
After accession	9.8	6.8	13.2	3.6	9.5	6.9

Source: Ianchovichina & Martin, 2004, p. 10.

China's accession to the WTO in November 2001 staged the resurgence of a trade giant that attracted torrents of FDI into the country and heaving the world trade to a new phase. The growth of both imports and exports exhibited annual figures above 20 per cent and preserved the momentum as can be seen in figure 7. The share of machinery and electronics in the trade surge was even more dramatic, surpassing the 50 per cent mark by 2003. Production and exports in the textile industry also skyrocketed with the abolishing of import quotas by the end of 2004 (Naughton, 2007). The labor market had reached its most rampant condition of all times. By the time Jiang Zemin said farewell in the 16<sup>th</sup> Party Congress in November 2002, he was leaving a country that attracted an annual FDI of \$52 billion, which made China the highest FDI receiver in the world surpassing the United States (Chai, 2003). Hu Jintao administration could not have overtaken the state administration in a more convenient position for economic growth. Domestic and international atmosphere allowed China to assume a humble, yet increasingly expanding role in global markets. FDI inflow grew rapidly as displayed in figure 8 during these years,



reaching \$186 billion in 2008 and the growth rate slowed down to 9.6 and 9.2 per cent in 2008 and 2009 respectively, due to the global financial crisis.<sup>31</sup>

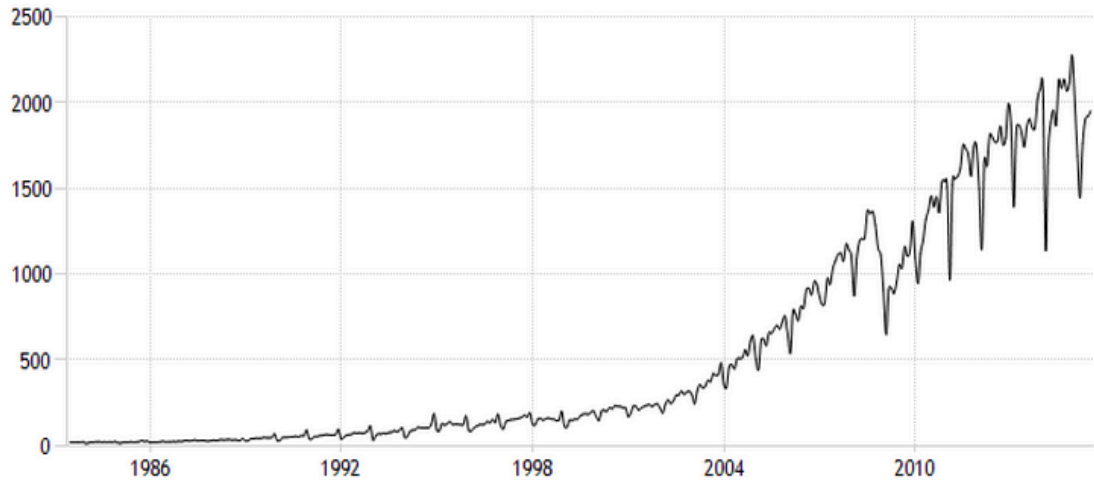


Figure 7. Export figures for China (1983-2015, in million US\$).

Source: <http://www.tradingeconomics.com/china/exports>.

China's potential was unleashed after her accession to WTO and it gained an unfathomable momentum that even outmatched the Japanese growth figures. PRC became the greatest FDI receiver and exporter in the world, roughly within a decade much and in 2014, China is estimated to overtake the US economy to achieve the largest GDP in terms of Purchasing Power Parity (PPP) with \$17.62 trillion against \$17.42 trillion (CIA World Factbook, data are in 2014 US dollars). Meanwhile the double digit growth figures were maintained until 2011, the numbers are still soaring around 7 per cent and more surprisingly, investors are nevertheless enticed by the huge domestic market; therefore, seeing China as the most attractive market to invest, despite the increasing wages in southern and eastern regions (Akkemik & Menteşoğlu, 2015). Hence China has been able to increase its value-added and still

<sup>31</sup> An unfathomable growth of 14.2 per cent was realized in 2007. The figure is hard to believe for any economist taking the already huge size of Chinese economy into account (approximately \$3.5 trillion by 2007) (World Bank Database).

lure more investors, which heaved the East Asian giant to become the top exporter in 2012 with \$1.87 trillion (US: \$1.85 trillion) and passed \$2 trillion mark the ensuing year.<sup>32</sup>

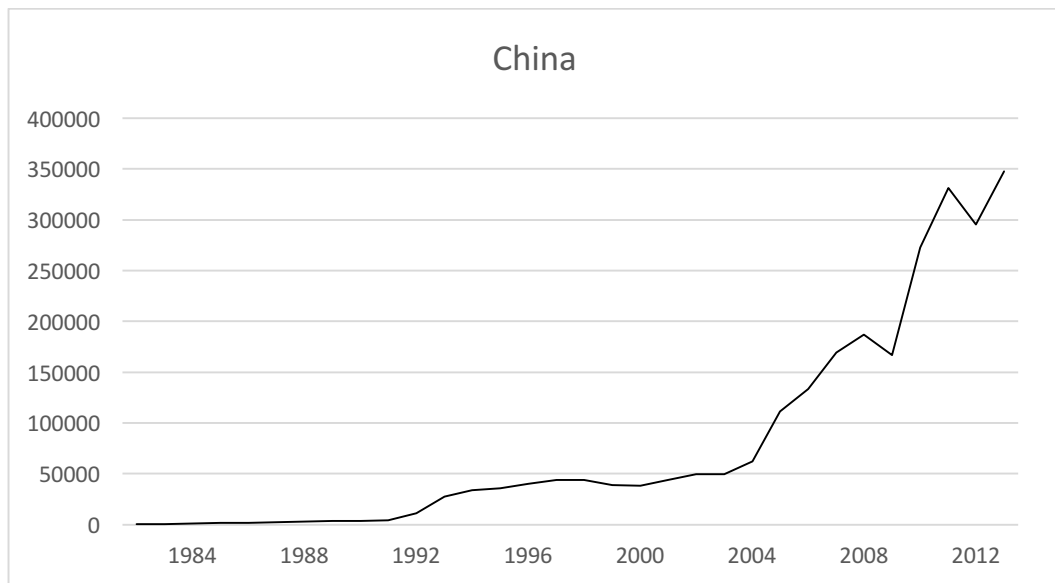


Figure 8. Foreign direct investment stock into China (1982-2013, in million US\$).

Source: Graph generated based on World Bank data.

It goes without saying that Chinese bureaucrats will face fierce problems that will inflict hardship on the Chinese state and people. The stock markets are becoming more volatile, which has witnessed the formation of a bubble in 2007 and a similar scenario is ongoing in the meantime.<sup>33</sup> The situation is exacerbated by the existence of massive unregulated “shadow banking” and the situation as a whole is leading to major issues to worry about the future of China’s economy for it is reminiscence of 1980s Japan and the economic posture of 2007 in the US notwithstanding (Krugman, 2011). Although the financial markets have become more liberalized as this makes it more predisposed to vulnerability. Figure 9 shows

<sup>32</sup> Data are obtained from the World Bank.

<sup>33</sup> Available online at <http://www.cnbc.com/id/102709962>

the exchange rate that is still strictly controlled by the central government to evade any sort of bitter ending that of Japan's 'lost decade(s)'. Meanwhile the industrial sector had 45.3 percent share in GDP growth in 2012<sup>34</sup>, which is a clear evidence for China that she is still somewhere around midway to become a developed economy. She has been deeply embedded into the globalized order, while managing to obtain enough quid pro quo to enjoy a degree of freedom for exercising idiosyncratic development policies according to the national interests, which will be examined in more detail from here on in.



Figure 9. Exchange rate of Chinese yuan against the US dollar (1960-2013).

Source: Graph generated based on World Bank data.

<sup>34</sup> The same year's figures for the US, Japan and Germany are, respectively, 21.0 25.6, 30.7. Data are obtained from the World Bank.

### 3.2 The political economy of development in China

The paradigm shift regarding the political economy during the transition of the Chinese economy since 1978 needs to be put under scrutiny. Yet the topic draws interest from a multitude of academic fields, since these events have been conducting alterations to every aspect of the Chinese nation, be it the society, environment, etc. For this reason, differing fields bring different approaches to the same concept as they embody separate perspectives that are complementary to each other. Without straying further away, for it has become a fact today that all economies are considered capitalist in a sense, it was inevitable to ask what China transformed into during the ‘reform’ period. This question was occasionally elaborated at a deeper intellectual level as for example, Hui and Karl (1998) named the sort of capitalism in East Asia as “Confucian Capitalism”, while political economist opinions such as Amsden (1989) and Wade (1990) had already classified it as ‘state-led capitalism’. Yet the Soviets ceased to exist in the beginning of the 1990s and only then was global economic system ‘one’ in the fundamental sense, while the ‘developmental state’ was never able to gather a support-base to form a rival ideology. The discussion about global economic system found itself on volatile grounds all of a sudden, as historians, economists and political scientists all rushed in to explain the new paradigm that opened up a wide space for heaps of brainstorming. This led to forming of new scenarios regarding the political order of near future, with the paragons such as Fukuyama’s *The End of History and the Last Man* (1992) and Huntington’s *Clash of Civilizations and the Remaking of the World Order* (1996) that scheme extreme circumstances for the 21<sup>st</sup> century global power struggle. On the other hand, ‘capitalism’ awaited more rigorous academic examination regarding the concept itself in particular, since it was a waste of time to think every nation had

built their economy upon an identical set of variables. At this point Hall and Soskice (2001) filled the gap by introducing the theory of *Varieties of Capitalism* that divides the economies into two groups, namely the “Liberal Market Economies” (LMEs) and “Coordinated Market Economies” (CMEs)<sup>35</sup> and sought an analytical explanation to institutional organization bases of developed capitalist economies that focused on firm strategies. The discussion gained more depth in the ensuing years to break out of the LME – CME dichotomy, as Carney, Gedajlovic and Yang (2009) defined the Varieties of Capitalism (VoC) for East Asia by classifying the capitalisms as emerging, transitional and mature. Many scholars have systemized the VoC with different country clusters, as a good summary of the literature can be seen in table 6, while selected works for the (East) Asian VoC can be found in table 7.

All these contemporary arguments however ignore the ‘developmental state’ theory in their theoretical approach, although they thoroughly experiment with institutional structures of the aforementioned countries. This may be so either for they completely ignore the the histories of both the developed and developing world in a way that contradicts the current political paradigm that I have described for the aftermath of 9/11 or they exclude this approach from their literature due to a prejudiced approach of taking any academic discussion that excludes ‘capitalism’ in its verbal content as off-topic to their scope.<sup>36</sup> Nevertheless all East Asian varieties of capitalism clearly are in a successive line with reminding again Johnson’s theory, if not an elongation of it regarding the development concept and a reasonable explanation is hard to bring about concerning complacency against such a model that had set the foundations of these contemporary works.

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<sup>35</sup> UK, US, Canada, Australia are some examples to LMEs, while Japan, Germany, Sweden are sorted as CMEs.

<sup>36</sup> The term ‘developing’ is overtly avoided within the scope of VoC, as emerging and transitional are preferred for the terms represent a more capitalist terminology.

By the way, following the argument in Chapter 2, it should be remembered that the Gerschenkronian theory could be somewhat related to East Asian late development. Russia was handled as an “extremely backward” country within Alexander Gerschenkron’s (1962) theory and it required the state to mobilize all resources to establish new industries in order to be able to catch-up with the front-runners. The Chinese case does not perfectly fit to this scenario (if the post-1978 period is considered), since the Maoist legacy had already left a quite well established industrial, agricultural, educational and infrastructural base to the upcoming government. Yet the national resources were in a far-reaching position from fulfilling its potential, and China’s position vis-à-vis Japan and other Asian Tigers was, indeed, extremely backward by the 1980s. Therefore, the Gerschenkronian development model does apply to PRC’s case to an extent, which deserves notice.

Overall, the main in the upcoming section is that PRC is indeed a developmental state for she still carries some qualities of the model and some major points will be observed more closely. The political economy that commenced with the reform-era in China will be observed from the beginning that will ensue by conducting a retrospective comparison with the previous East Asian developmental states. The following will pry open the institutional mold of development in PRC regarding its effect on the industrial policies of the reform era, while an analysis of China’s transitional stage within development process in the era of excessive globalization will wind it up for this section.

Table 6. Selected Analytical Frameworks For Comparing National Business Systems.

Representative Authors	Institutional domains	Country groups	Notes
Hall/Soskice	Financial systems, industrial relations, skills, inter firm coordination	Liberal vs. coordinated (industry vs. group-coordinated)	Rooted in transaction cost analysis
Hollingworth, Boyer, Streeck, Crouch	No systematization	Every case unique	Based on six governance mechanisms for coordinating transactions: markets, hierarchies, states, associations, networks, and communities
Amable, Boyer	Product market competition, the wage-labor nexus or labor market institutions, finance and corporate governance, social protection / welfare state, and the education / training system	Five country clusters	Uses some inductive clustering of types, unlike the more a priori approach of Whitley
Whitley	States, financial systems, skills, trust / authority	Six ideal-types: fragmented, coordinated, industrial district, compartmentalized, state organized, and highly coordinated	Compares eight dimensions of coordination related to horizontal vs. vertical organization, control through ownership vs. non-ownership, and employer-employee dependence
Schmidt, Rhodes, Ebbinghaus, and others	Emphasis on state, welfare state	Four types within Europe	Eclectic

Source: Carney, M., Gedajlovic, E., & Yang, X. (2009).

Table 7. Some of Main Arguments And Findings of East Asian Varieties of Capitalism.

Paper	Geographical focus	Main arguments and/or findings
Redding and Witt (2009)	China	China's institutional and cultural environment does not support the creation of complex organization, which limits the development of competitive capabilities.
Tipton (2009)	Southeast Asia	Postcolonial heritage is an obstacle to establishing the bureaucratic capacity needed to implement state-led industrialization.
Ritchie (2009)	Singapore	Competent economic bureaucracy establishes a complementary blend of liberal and coordinated market institutions that supports accumulation of high quality technical skills.
Andriesse and Van Westen (2009)	Malaysia and Thailand	Peripheral regional economies each develop tight complementary institutions that generate little indigenous entrepreneurial activity.
Huegens et al. (2009)	Twelve Asian countries	Meta-analysis finds that ownership concentration has a small positive performance effect. Supports the hypothesis that corporate governance choices act as a substitute for voids in institutional environment.
Steier (2009)	Asia	There is variation in characteristics of Asia's familial capitalism. Family firms' contribution to innovation and entrepreneurial capacity varies with each stage of economic development.
Terjesen and Hessels (2009)	Asia	Finds support for VoC hypothesis that high quality vocational education and flexible systems of industrial relations positively relate to export performance. Best regional performers, Japan and Australia, each represent opposing CME and LME ideal types of VoC, also support the VoC hypothesis.
Tand and Zeng (2009)	China	Successful SOE performance was marked by efficient resource use in early reform period. In later periods, successful performance is increasingly determined by flexible resource allocation. Better performing SOEs are transitioning from exploitation-based to exploration-based strategy.

Source: Carney, M., Gedajlovic, E., & Yang, X. (2009).

### 3.2.1 A closer look at the critical turning points

Prior to the 1989 events, when the redundancy of 'reform' policies in effect had become obvious, China was enforcing a liberalization agenda that accommodated Zhao Ziyang's political goals, which was trying to live up to a parallel mindset to the



*development-democracy* hypothesis that could have excelled China to a status of being held among the global elite. Zhao had lived through a significant resistance from the conservative wing of the party and could only survive for the adamant support he saw from Deng Xiaoping. However, the idea that Deng had in mind did not include any measures of political liberalization, which led to the ousting of democratization wing in the aftermath of 1989 student protests (Wei, 2015). By this time, China had already been involved with globalization to an irrevocable level by opening its doors to a FDI-hungry policy. An extremely critical point of this process was the early acquisition of Japanese Official Development Assistance. Starting from 1979, approximately 3.4 trillion Japanese Yen was delivered to China over three decades as ODA, which accounted for 60% of all bilateral aid, mainly concentrated on infrastructure projects that enabled China to attract massive amount of FDI in the following years. With the territorial dispute over Senkaku/Diaoyu Islands and for China had started to become a lender country, Japan gradually decreased the level of aid to China, eventually ending it 2008 through a decision given in Japanese Diet in 2005 (Drifte, 2006). Meanwhile, the Japanese ODA has been very effective for attracting Japanese FDI to China as well (Blaise, 2005), when China was yet to join the WTO and in dire need of this financial support.

Another early watershed was the establishment of SEZs, which were given a high degree of flexibility in order to attract FDI and transfer technology (Chen, Chang and Zhang, 1995; Ge, 1999). Local governments were given a salient autonomy to implement their own profit-seeking policies, which was exacerbated due to the incentive policy of keeping a share of the regional profit that became rather a concession given by the central government (Shirk, 1985). China was liberalizing quicker than expected for some, but Deng Xiaoping knew China's

position to be very backward in comparison with Japan, Korea and even in Chinese dominated economies like Taiwan, Singapore and Hong Kong. He was not shy of admitting this situation in certain occasions, like his visit to Nissan factory in Japan in 1978 when he acclaimed: “Today I have learnt what modernization is like” (Naughton, 1993; p. 509). All that Deng had in his mind was to get the country on a high growth track and desperate measures were to be taken if necessary.

Nevertheless, by the end of the 1980s, it was obvious that the lack of control did not work to retard a healthy growth. As the government had commenced from the point of “let(ting) some people get rich first”, the sudden deterioration of social equality had evoked a significant disturbance. The early 1980s had impressively decreased poverty in the rural areas and revitalized the local economies undeniably, but the second half of the same decade was leaning towards a capital-intensive urban modernization that presented unequal advantages to certain zones in the eastern coast (Ünay, 2015). The socio-economic balance was deteriorated in a quick fashion according to the World Bank Gini Index that is 0.299 in 1987 vis-à-vis 0.370 in 2011. These figures show a dramatic sway in the negative direction.<sup>37</sup> Yet the same database indicate a score of 0.411 for the US and 0.380 for the UK in 2010, which signs a positive change in China’s account since returning from a peak of 0.426 score over the span of 2002-2008 that marked one of the highest inequality increases for any country in two decades. It is stated in the 2005 five-year plan that “the bottom 10 per cent of the society owned less than 2 per cent of all societal assets while the top 10 per cent owned over 40 per cent ...” (as cited in Fan, 2006, p. 713). Chinese governments have not closed their eyes and ears to this situation as the growing gap

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<sup>37</sup> There are several Gini indices and other calculations might show even a greater increase in the level of inequality. Meanwhile World Bank data does not provide any figure for the early 1980s, when social equality was relatively enhanced. Therefore, the margin between the years 1980-2010 should be reasonably greater.

between the rich and the poor, besides the lack of a well-established social welfare system has found place in between the top priorities of the 11<sup>th</sup> and 12<sup>th</sup> Five-Year Plans (Fan, 2006; KMPG, 2011), which seems to be giving results for the better. So far, it is a significant fact that in order to achieve long-term growth goals, the wealth of Chinese people has been the major sacrifice, recording a major increase in the income gap that has ‘let some get rich first’, but have ignored the others left behind as long as possible. An adjacent major challenge for the CCP seems to be the differences between the inner parts of China vis-à-vis the coastal regions. 12<sup>th</sup> five-year plan also attends to this issue and although efforts seem evident for realistic approaches, Chinese government set more ambitious goals for the future such as the tentative ‘New Silk Road’ project that intends to kill two birds with one stone by attracting investment and tourism to inner China, while trying to show off strength through such massive infrastructure projects that are unprecedented regarding the size and globalist vision (Tiezzi, 2014).

As Deng was also convinced that his support for Zhao had led political control to slip away from the grasp of the CCP, the political economy needed a fresh start to reset the course of the development on the right direction. The 14<sup>th</sup> Party Congress in 1992 set the stage for Deng’s domestic and international ideas and policies to be elevated to the theory level that is called in Chinese *jianshe you zhongguo tece de shehui zhuyi*, or “building socialism with Chinese characteristics” in its essence (Chai, 2003). While a brief look into the congress report gives enough idea of the new normal: the phrase “reform and opening up” was mentioned 55 times, “economic development” 24 times, “socialist market economy system” 10 times and “socialist development of modernization” 10 times. Meanwhile “socialism with Chinese characteristics” was mentioned 62 times in the 18th Party Congress Report

in 2012, which is a clear proof of the Dengist ideology to have laid foundations to the official rhetoric as much as the theory ever since. The decisions of the 14<sup>th</sup> CCP Congress, therefore, should be observed more closely. Brandt, Ma and Rawski (2014; p. 101) list major topics as “

- increasing the center’s fiscal strength (Wong and Bird 2008).
- enterprise sector, including the furloughing and eventual dismissal of tens of millions of redundant state sector employees, substantial privatization of both state and collective enterprises, along with further reforms—including virtual elimination of planned allocation of materials—that sharply increased the market orientation of the remaining government-linked firms.
- central control, strengthened the central bank, injected new assets, and removed nonperforming loans from the balance sheets of state-owned banks, increased the banks’ commercial orientation, and reduced the power of provincial and local officials to influence lending decisions (Allen, Qian, and Qian 2008; Yi 2010).
- transforming China into a major participant in global flows of commodities, capital, and technology (Branstetter and Lardy 2008). To this end, China reduced tariffs and other trade barriers in advance of its 2001 entry into the World Trade organization, established numerous economic zones and industrial parks to attract overseas and domestic investors, loosened restrictions on overseas travel and study for its own citizens, encouraged Chinese firms to invest overseas, and extended legal, tax, and regulatory changes initially restricted to special economic zones and coastal regions throughout the domestic economy.
- orientation, including extensive privatization and deregulation of domestic trade and transportation, a major roll-back of official involvement in pricing and allocation of both commodities and labor, and a rapid increase in the share of private business in output and especially employment, backed by new constitutional and legal provisions affirming the legitimacy of private ownership and the state’s responsibility to protect private (along with state and collective) property.”

The report serves as a notice to entire China that the CCP will continue to exercise power in monopolistic measures, but the centralization does not mean an interruption to reforms, and rather the contrary to accelerate globalization. This

intention was already blatant for Deng Xiaoping's southern tour, only a few months prior to the Congress, to promote this market-oriented agenda and most possibly serves as the most critical turning point of the reform era that has enabled a healthy development process that was barely hindered at any point until this very day.

Some other critical points are also worth mentioning, such as the banking reform in 1993. This was a firm move supportive of the new normal as the non-performing loans were taken under control by lending or restructuring after the economy started to heat up with high inflation and just before the 1997 crisis, 30 per cent of the Township and Village Enterprises (TVEs) went bankrupt and the privatization trend mounted up quickly. *Remninbi's* exchange rate was strictly under the control and the officials were monitored throughout the entire process, while stock markets were very underdeveloped to form a speculative threat; hence, any market failure that could have eventuated during the 1997 East Asian financial crisis had been shrewdly forestalled (CSIS, 2016). China assumed regional responsibility during the 1997 crisis by committing over \$4 billion aid through the channel of IMF<sup>38</sup> and avoiding devaluing Yuan, which could have further destabilized the financial conditions within the region by triggering other countries to devalue their national currencies. Subsequently, China was able to join the WTO in 2001 without any major interruptions in the globalization process together with an increased camaraderie and stability within the party and national economy. This very event changed the course of Chinese history as an unprecedented FDI inflow was inaugurated and China has been covering a bumpy road without any cardinal mishaps ever since. Meanwhile the demographics of the country was in its perfect state as the model Bloom et al. (2007) shows that the working age ratio has peaked in

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<sup>38</sup> Official statement of Ministry of Foreign Affairs of PRC. Retrieved from [http://www.fmprc.gov.cn/mfa\\_eng/ziliao\\_665539/3602\\_665543/3604\\_665547/t18037.shtml](http://www.fmprc.gov.cn/mfa_eng/ziliao_665539/3602_665543/3604_665547/t18037.shtml).

East Asia between 2000-2010. Chinese planners were certainly aware of this fact as they are renowned for their elaborate work on population control.

### 3.2.2 Proximities and differences of the Chinese ‘developmental state’

The timing of China’s development has come with a different set of measures from all other stories of development in the region, since it coincides with a globalization era forcing the implementation of an open-door policy from the very beginning.

Meanwhile the staff of CCP has always been precautionary to pursue a political line that would not let go off the reins in order to offset the collateral damage that might be inflicted on the national economy for liberalization comes with a price of vulnerability. As the markets were not so much interactive in the early post-WWII period until 1980s, the interventionist policies could not have inflicted as much of a harm as it would have in the aftermath of the Cold War. It is common knowledge today that the efforts for harnessing an economy by state interventionism may very well exacerbate any possible failure of a market equilibrium (Nee, Oppen and Wong, 2007) and the East Asian financial crisis of 1997 was a blatant act that served as a sound proof of this fact. Haggard (2000) asserts that “as a bank dominated financial system with a high level of government intervention, weak norms of regulation and supervision over commercial banks, and a large accumulation of non-performing loans” (as cited in Baek, 2007, p. 485). Yet Chinese government was able to elude the crisis for a set of prudent measures that were already in effect. Most prominent of these policies were strict central capital control (after 1993), inconvertibility of domestic currency, traditional absence of short-term external debt, continuous trade surpluses, hence accumulating massive foreign exchange reserves that was propped by a large volume of FDI inflows (Lardy, 2000; Fernald and Babson, 2000; as cited

in Baek, 2007, p. 485-486). Most of the aforementioned peculiarities were fundamental characteristics of the preceding East Asian developmental states as well.

A critical dimension of similarity is the strategy China had adopted at the enterprise level that also recalls similarities with the ‘Japanese model’. As the *keiretsu* in Japan and their Korean counterparts, the *chaebol*, were conglomerates that stimulated growth policies of the idiosyncratic governments, the cases of SOEs remind somewhat of a similar story for China as Baek (2007) argues:

To readjust the big SOEs, a policy has been introduced to develop business groups into competitive conglomerates. The experiences of the Japanese *keiretsu* system and the Korean *chaebols* have been used as a model, of which the latter have more implications for China (Harvie and Naughton, 2000: 57). Although there have been disputes on the function of these conglomerates since the Asian Financial Crisis (Wu, 2002; Lardy, 2002:152), senior officials still feel that the experiences of South Korean and Japanese conglomerates are viable during the initial development phase (Saich, 2001: 234-5). Since 1998, the Central government has promoted "bureaucratic-led restructuring" and has been developing major business groups. PetroChina and Sinopec were targets of massive restructuring and international flotation. China Telecom acquired and merged many telecommunication companies. Many telecommunication companies were reorganized and Chinese airlines were reorganized into three big groups. (p. 489)

The Chinese, nevertheless, choose to form big enterprises via horizontal merger of big enterprises (Baek, 2007), as Japanese and Korean cases display a vertical integration as well as horizontal (Whitley, 1999).<sup>39</sup> Japanese influence during this period makes itself obvious from the very beginning as the transition stage assumed the famous slogan *mo shitou huohe* that is ‘crossing the river by groping the stones’, which highlights ‘gradualism’ as its main attribute, overtly relates to refraining from taking any premature step during the industrialization process. This is very reminiscent of the *Flying Geese* model that commenced with a tip-off point of

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<sup>39</sup> Japanese *keiretsu* and Korean *chaebol* are formed in either vertical or horizontal integration business models. For more information on the East Asian business models, see Whitley (1999).

technology import and advancing the technical expertise via reverse engineering, as the *avant garde* of such policies that led to the creation of East Asian late development theory was no other country than Japan.

The Japan-China Long-Term Trade Protocol that was signed in February 1978 was one of the initial marks of Japanese influence on Chinese developmental strategy. According to the agreement, Japan would have installed state-of-the-art heavy industry plants in return for coal and oil exports over the course of eight years (1978-1985), where a reciprocal commitment of \$10 billion of exports was made. \$5 billion worth contracts were agreed upon by August and another \$5 billion was expected to be settled by the end of the year (Bramall, 2000 & Togo, 2010). Although the protocol broke down due to Chinese inner-state frictions and failure to reach oil export goals, the Chinese approach should be marked as an attempt to “learn from Japan”, while exploiting the most out of the weak spot of its counterpart, as Japan’s need for energy resources were obvious. This example is also reminiscing of the opportunistic approach the East Asian latecomers had assumed throughout their entire course of catching up. Either the Communist threat or the Vietnam War had presented such occasions to exploit the most out of the lenience of the Americans, for executing a developmental agenda to establish an export-based production economy with the US being the primary customer (Togo, 2010).

Another similarity between China and the other developmental states in East Asia is the inexorable dominance of the state over the allocation of financial resources; hence enjoying the luxury of choosing the winners in prominent sectors, foremost in the heavy industry (Baek, 2007). Although the local authorities were given a varying degree of self-autonomy to conduct policies to their liking within the



framework, the central government sets for this unconventional organizational structure (Breslin, 2010).

Even though all developmental states have adopted export-oriented strategies and never given up on this attribute, the organization of the corporate side of the economy did not typically match in all these countries. As Japan and Korea had nurtured their heavy industries through policy loans, the Chinese government had to adopt a more similar way to Taiwan's export-oriented "soft industrial" policy in the 1970s and 1980s that relied on a dual-economy of both state and private sector. Through this policy, the small and medium sized private companies maximized the utilization of Foreign Direct Investment (FDI) inflows to heave the national economy with their export activities and the public sector undertook capital-intensive import substitution industrialization (Howe, 1996; Baek, 2007). In China, a similar dual-economic outlook has been displayed for the export based economy, which mostly rose on the shoulders of non-SOE sector, namely the privatized Township and Village Enterprises (TVEs), private firms or foreign invested enterprises (FIEs) (Akkemik and Menteşoğlu, 2015) that benefit the most from FDI. The State Owned Enterprises (SOEs) on the other hand, which Taiwan did not depend much on, operated in a wide-range of sectors in the domestic market, and were more concerned with the local demand and inclined industrial policy imposed by the government (Baek, 2007). As the non-SOEs nurture themselves through listing their companies in international stock exchange markets or fund raising , the state owned banks are at the service of public enterprises as this marks a significant difference with Japan's *main bank* system that had superintendent private enterprises within its organizational structure (Baek, 2007) to finance the *keiretsu* (Akkemik, 2013). Meanwhile, another important similarity with Taiwan was the strong control

mechanism over the stock markets. Yet the speculative processes have become more explicit during the last decade as figure 10 shows the occasional bubbles in the Shanghai stock exchange. The recent deflation process of the bubble explains how well China can handle the speculative capital vis-à-vis the experiences of Japan and the USA (Baek, 2007). China has also followed a different path from Taiwan by pursuing “an expansive fiscal policy with low interest rate since the late 1990s” (Baek, 2007, p. 495).

Planned economy is another integral part of the political economy for setting national goals of development as China is still operating devotedly according to these plans, the upcoming one being the 13<sup>th</sup> five-year plan (2016-2020), as the first one was drawn up in 1953 (Casey and Koleski, 2011). Although 5-year plans were not held in high esteem in Japan, the Japanese government had published their first five-year plan in 1955 and stayed committed to the planned economy during the developing stage (Lippit, 1975). Nonetheless, the Korean case displayed the most loyal executive performance regarding the 5-year economic plans during the Heavy and Chemical Industries (HCI) drive during Park Chung-Hee administration. The first one taking effect in 1962, 3 more subsequent 5 year-plans pushed Korea to economic development in rapid pace (Graham, 2003). The ‘planning’ logic is a part of Japan even today as Prime Minister Shinzo Abe has declared a five-year plan to reconstruct the devastated areas after the March 2011 earthquake (Japan Times, 2011). Although the plan is a regional one, it shows the state reflexes can still be reinstated under desperate measures.

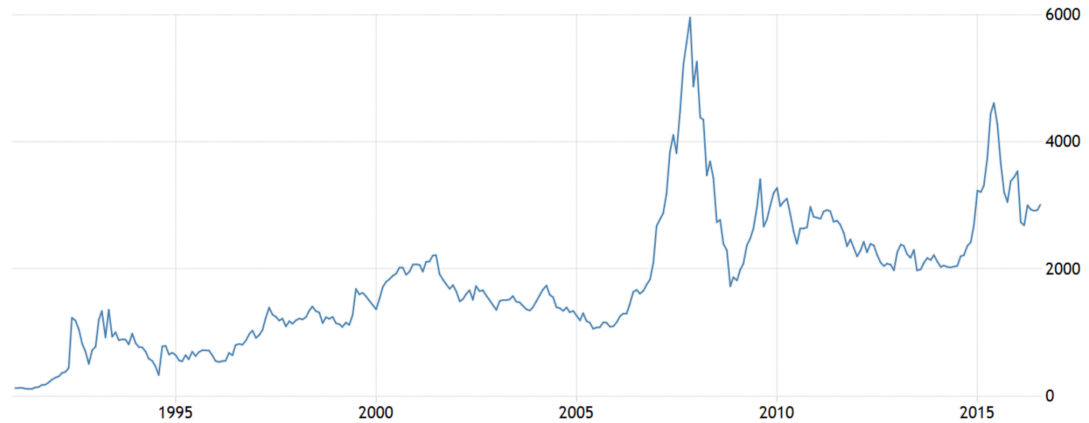


Figure 10. Outlook of Shanghai Composite Stock Exchange (1990-2016).

Source: <http://www.tradingeconomics.com/china/stock-market>.

Social equality and fair income distribution have grown to the opposite of the successful developers surveyed in this dissertation. China's development has proceeded to open the gap wider between the rich and poor, whereas Japan, Korea and Taiwan have consistently ameliorated their socio-economic justice and pursued to create welfare states (Huber and Stephens, 2007). Another important point is that Japan, Korea, Taiwan and others are not recalled for their crony capitalism. Japanese meritocracy was an institutionalized tradition through the Meiji and Taisho periods (Jansen, 2002). In order to re-legitimize the CCP before the eyes of Chinese people after the Cultural Revolution period, when campaigns against professional expertise were frequent, substantial changes were executed regarding educational, recruitment and institutional structures. Yet surveys during the 1990s was still indicating that party membership is regarded as an independent notion from education in the pursuit of a successful career path (Bian, Shu and Logan, 2001; Walder, Li and Treiman, 2000). However, opening-up and regional rivalry can be thought to have incrementally created a more competitive business environment that promoted meritocratic recruitment. The corruption issue is also a prominent issue related to

meritocratic governance and equality among different social strata as they all trigger one another. The dual-economic system, where regulations were not strict enough and a vague reform pattern has stimulated a relentless survival environment that also deteriorated the social values to stand against corruption (He, 2000). Yet the fraudulent business relationships in Wall Street, which were revealed after the 2008 financial crisis is a clear proof that corruption may happen regardless of the state being developmental autocratic or liberal democratic, where the rule of the law is so-called sovereign (Xu, 2011). Meanwhile as we already know from the previous chapter that all developmental states have an autocratic character that ignores the political demands of the working class, although they would avoid any sort of clash that would threaten political goals, and China is no exception to this case. Yet there is still no sign of any step towards holding elections for central governing organ. As Korea and Taiwan had to democratize due to external and internal pressures, CCP exposes a firm outlook towards maintaining itself as the ultimate governing elite of PRC.

Many other facts can be mentioned, ranging from education policies, to macroeconomic regulations. Primary education was the main priority as in the late Meiji-period as Deng Xiaoping administration had followed the same model. Similar macroeconomic policies stand out such as inflation rates above 5 per cent were within tolerable limits, due to an expansionist policy. During this course light and heavy industries were combined for a 'big-push' like Japan's augmenting military-centered industrialization process in the 1930s, thus a 'textile-first' strategy was never favored for execution during the infant stages of development. Speaking of infancy, China opted for low tariff rates on imports of primary commodities and capital goods to support their newly established industries and promote technology

transfer at the same time, drawing a very similar development strategy to that of Japan's (Bramall, 2000). Yet the implemented policies were not strictly in accordance with the retrospective development course Japan had lived through, but rather were intended to alloy the suitable set of policies sporadically, so that China's (very) late-development scenario in mind could indeed be successful. Overall, Japan's influence on China has not been to any lesser than its other East Asian counterparts and this has been most apparent during the early times of Dengist restoration.

### 3.3.3 Institutional foundations of industrial policy reform

The recent belief regarding the political foundations for achieving a market economy is that property rights should be procuring the necessary institutional bases. Failures of reform attempts by governments without providing a safe environment for property rights are witnessed on ordinary occasions. Even though the Chinese Constitution has been amended to protect the private property rights in 2004, not much has changed in practice. Suspicions have not faded for the rule of Chinese state is not by law, but by a form of government that commands all political and economic institutions by monopolistic measures installed on a single party, namely the CCP (The Economist, 2007). Figure 11 shows a general scheme of CCP.

Xu (2011) singles out the main attributes of the CCP regime as authoritarian and regionally decentralized, as the governing parties of the national economy have been the regional governments for the deployment of authority concerning microeconomic policies. He claims that:

“Although by constitution China is not a federal state, in many important economic issues Chinese subnational governments are more powerful than their counterparts in federal countries around the world since they are responsible for much broader regional matters than

authoritarian regime is one of the fiscally most decentralized countries in the world. Contrasting China’s fiscal decentralization with its counterparts in the rest of the world during the early 2000s, the total expenditure of Chinese subnational governments accounted for about 70 percent of the national total, which was far larger than that of the world’s largest federal countries such as the United States (46 percent), Germany (40 percent), and Russia (38 percent) (Christine P. W. Wong 2006).” (pp. 1082-1083).

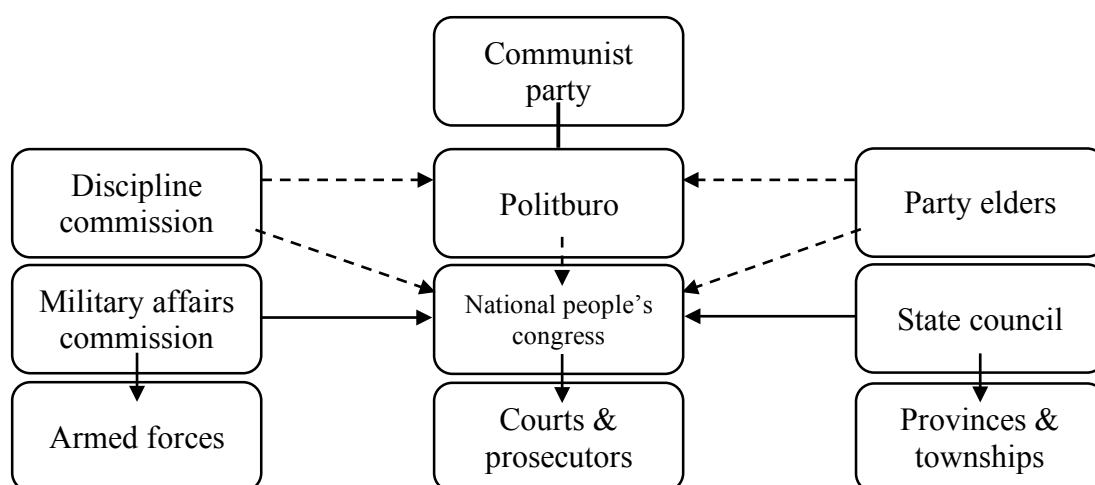


Figure 11. CCP organizational body.

Source: [http://news.bbc.co.uk/2/shared/spl/hi/in\\_depth/china\\_politics/government/html/1.stm](http://news.bbc.co.uk/2/shared/spl/hi/in_depth/china_politics/government/html/1.stm).

The five-year plans that are dictated by the National People’s Congress constitute the outline of macroeconomic goals together with industrial policy directives, which are carried out by these regional governments. This specific quality distinguishes “China’s regime from any other federal state, unitary state or a totalitarian regime” (Xu, 2011, pp. 1082-1083), meanwhile leaving it as a unique case between all developmental states that had relied on central planning. Figure 12 stands for China’s regional governance structure, while figure 13 represents a generalized version. Meanwhile the lack of austere central control over the degrees of freedom granted to regional governance have inflicted calamities such as the *Great Leap Famine* and *Tiananmen Square Incident*, which made PRC elites approach such sensitive matters more attentively as they continued the Dengist

reforms further. As the CCP elites in the central government have the power to reward or punish all national and subnational offices, they enjoy a high degree of authority over potential incongruous incumbency; hence, a constrained performance-based evaluation stimulates a highly competitive intra-regional environment.

Besides the main governing body, the crucial industrial institutions should also be analyzed. The state and non-state sectors have formed a dual-economy for China that has been subjected to a not-so-orthodox gradual transition as one would expect from China according to the impression this dissertation has given thus far. The prime parties of non-state sector are the Township and Village Enterprises (TVEs) that accounted for 80 percent of the output of non-state sector in the early 1990s, while the state sector's paramount segment consist of the State Owned Enterprises (SOEs).

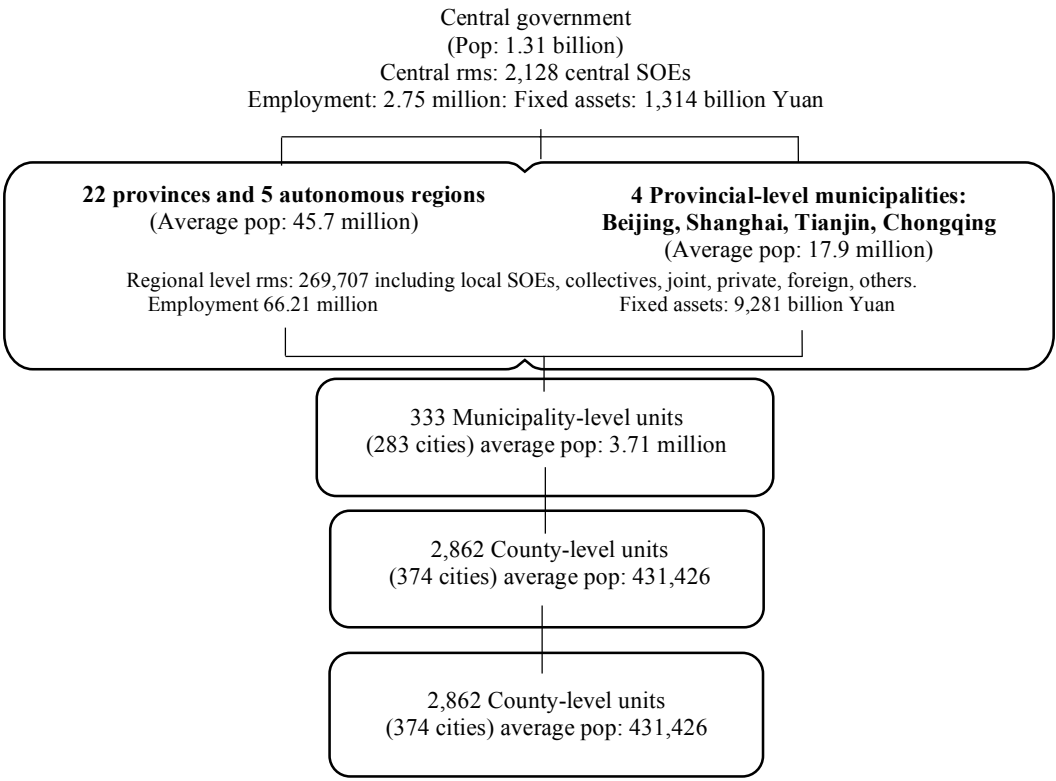


Figure 12. Regional governance structure of Chinese economy.

Source: Xu (2011: 1084).

As the history of TVEs date back to Great Leap Forward, these enterprises had been the backbone of the Chinese industry ever since with an unprecedentedly large scale that has centered its focal point as ‘rural industrialization’ (Lin and Yao, 2001). The reforms after 1978 have increased the success rate of TVEs due to regional decentralization, which facilitated a higher utilization of the individual potential through various organizational innovations. Having a wide range of products that meets the local demand, there has often been close ties between the TVEs and SOEs that has enabled “the transfer of technology and management know-how” on frequent occasions (Xu and Zhuang, 1998” as cited in Xu, 2011’ p. 1118). TVEs have scored substantially higher growth rates than the state sector and China’s average GDP growth throughout the 1980s.<sup>40</sup> Although the property rights are vaguely defined, TVEs have nevertheless played a huge role in China’s early development strategy (Naughton, 2007). While most of the 49 million reallocated workers in the agriculture sector were employed by these institutions (Zhu, 2012), the total number of employees in TVEs had reached 61 million by 1995 and the GDP share of increased to 37.5 per cent by the same year from 14.3 per cent in 1980 (Xu and Zhang, 2009). Although TVEs have declined thorough frequent bankruptcies in the late 1990s, when the private property rights started to develop and private enterprises commenced to have a bigger share in the market, the TVEs were caught in an inevitable privatization stream that caused millions of workers to get laid-off each year from 1996 on, yet Xu (2011; p. 1119) sums it up very well about the legacy and role of TVEs in contemporary China:

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<sup>40</sup> The growth figures for state, non-state sector and GDP between 1981-1990 are, respectively, 7.7, 28.1 and 8.7 per cent per cent. Data are taken from Xu (2011).



still at work today, and their impacts on the rise of entrepreneurship in China are far- reaching, such as on the fast growth of clusters of large numbers of small private firms in coastal provinces.

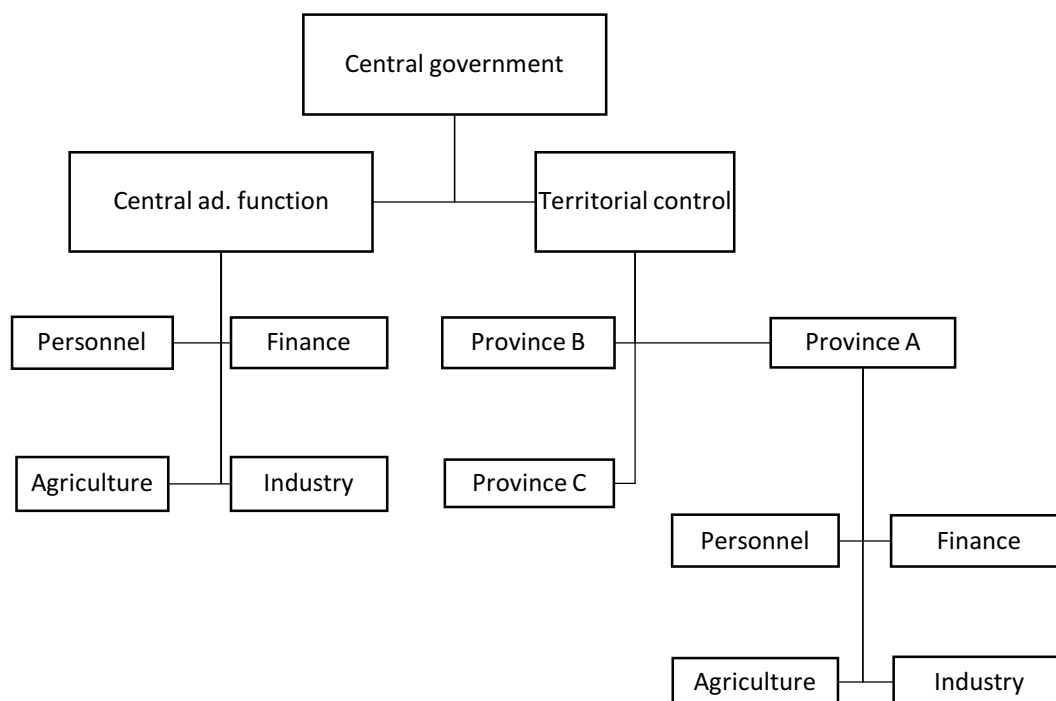


Figure 13. Stylized governance structure in China.

Source: Xu (2011: 1087).

Meanwhile, subnational governments mostly owned the SOEs, which was not the case in other transition economies. The reform in the state sector was intended to excel on regional competition. Yet the mounting debts of the SOEs became a highly jeopardizing fact against the Chinese economy in the 1990s. Together with the restructuring of non-performing loans of the state-owned banking sector in the second half of the decade, China lived through five or six million annual layoffs in the state sector until 2001. The “sector was significantly transformed, total loses were reduced from 306.7 billion RMB in 1998 to 184.6 billion RMB in 2000, net profits were increased from 21.3 billion RMB in 1998 to 958 billion RMB in 2005”

were reduced from 306.7 billion RMB in 1998 to 184.6 billion RMB in 2000, net profits were increased from 21.3 billion RMB in 1998 to 958 billion RMB in 2005” (Xu, 2011, p. 1123). The critical year for disposing of the redundant SOEs was 1995, when the central government announced the aforementioned privatization strategy that was enunciated by the former Prime Minister Zhu Rongji, *zhuada fangxiao* (“grasp the big, let go the small”) (Beeson, 2009). This way, the state was to keep the largest and strategic SOEs, which were no more than a few hundred, and the rest was to be given under the patronage of regional governments. Since privatization has always been a highly controversial issue in China, as the central authorities postponed it until it presented itself as an inevitability. The execution of the procedure was also treated on municipal level and a set of provinces were selected as experimental trials. The end product has been a successful transformation of a sector plunged in an SOE bulk into a more competitive market environment that has gradually given more space to FIEs and private firms, who were given the operation and administration rights of Chinese SOEs for pre-determined time periods. The incessant growth pattern achieved during Hu Jintao administration owes its success very much to this institutional alignment (ibid).

Overall, China’s political economy that relies on a regionally based industrial policy implementation forestalls nationwide economic failures; hence gives the chance for local experiments, as the failed SEZ plan during the 1980s is a blatant example of this opinion. This system not only decreases the risk involved in central planning, but also opens up space for empirical political economy that can work substantially for the benefit of a developmental state, which constructs a long-term political agenda. This practice also helped to avert the opposing voices against reformist acts; therefore, it can be deemed as a perfect fit for China and a key factor

to its success at implementing the reform policies and achieving a great success regarding export-led growth that gradually climbs the ladder of high value-added technology production. Meanwhile a triumphant interventionist policy of ‘letting the losers go’, rather than trying to achieve the ‘impossible task of picking the winners’ (Rodrick, 2006) has been the watershed for creating a significant momentum towards a more seamless shift into globalization together with maintaining of a perennial high growth performance.

### 3.3.5 Globalization and climbing up the ‘development’ ladder

Accession to WTO has marked the turning point of China’s integration to an international political economy system that has been under US domination since the Soviets have withered away (Beeson, 2009). Although its interests might clash with the hegemonic whims of the American government, it would be naive to think that China can be forced to succumb the way Japan was, for the US government does not have such capability of playing ‘soft ball’ like it had in 1985. The National Military Strategy of United States of America (2015) abstains from using any offensive language, despite the self-evident discontent is ubiquitous like the recent interview of the chief of the Joint Staff of the Japan Self-Defense Forces, Admiral Katsutoshi Kawano, which voices the rising concerns on Japan’s behalf regarding increasing Chinese presence in the maritime areas around Malacca Strait (Hayashi, 2015). China’s situation going forward is most certainly worlds apart from the circumstances Japanese state was surrounded in the 1980s. Meanwhile it is highly noteworthy that China’s second development stage that carried PRC to her contemporary success, namely the post-1993 reforms were kick started on the wake of Soviet regime. This made it impossible for China to implement developmental

state policies from ground zero, as Japan had in the 1960s, for the new world order was ingesting all markets to a globalized political economy that excluded highly protectionist regimes, not to mention the interventionist ones. China was either to adapt a strategy that was developmental to a lesser extent for grasping this unique chance of attracting unfathomable amounts of FDI, which would help the facilitation of an export-based market economy, or would have inflicted perhaps a greater harm than any of the bitter memories of past of which had been the nightmares of CCP leaders. By picking the first option, China has gained a significant time to develop herself and made the most of this period by ‘letting the geese fly’. The upcoming five-year plan in 2016 should help us understand how China will move forward and how far she has proceeded according to the 12<sup>th</sup> five-year plan (2011-2015) that singled out some of the most crucial development issues. The major ones can be listed as reducing disparities, moving up the value chain, scientific development, environmental protection and energy efficiency, increasing domestic consumption and achieving “higher quality growth” (KPMG, 2011). Figure 14 shows the per cent share of GDP on R&D expenditures (both public and private) in Japan, China and the US (World Bank). Meanwhile, OECD World Technology and Industry Outlook (2014) expects China to outpace the US on total R&D spending by a tentative date of 2019. Meanwhile fighting against corruption has been perhaps the leitmotiv of Xi Jinping administration, whom had at least been successful at creating a positive public opinion towards the issue by letting the probes reach top level CCP leaders, hence conveying the message that “no one is untouchable”.<sup>41</sup>

The lack of developmental state attributes, which have been specified in Chapter Two should not give the impression that China has given up on

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<sup>41</sup> Available online at <http://www.theatlantic.com/international/archive/2015/04/xi-jinping-china-corruption-political-culture/389787/>

developmental state as a whole. PRC indeed harbors developmental qualities that puts it forward as the last of a dying breed. China has not been committed to the ‘developmental state’ theory on the ideological level, but she has rather been cruising at an ‘adaptive’ level (Wong, 2004) that seeks to exploit its advantage on a pragmatic scale, and this stands as a blatant display of its Dengist ideology. CCP elites did not provide the continuity of such political economy thanks to the tolerance of their neo-liberal counterparts, but rather by subtly setting up a reciprocal dependence between China and the die-hard capitalists. Whether China will ever forsake her developmental features in total is a question of great ambiguity as the world might just be disengaging from its unipolar framework in near future and enter a ‘neo-new world order’ that features China as one of the playmakers.

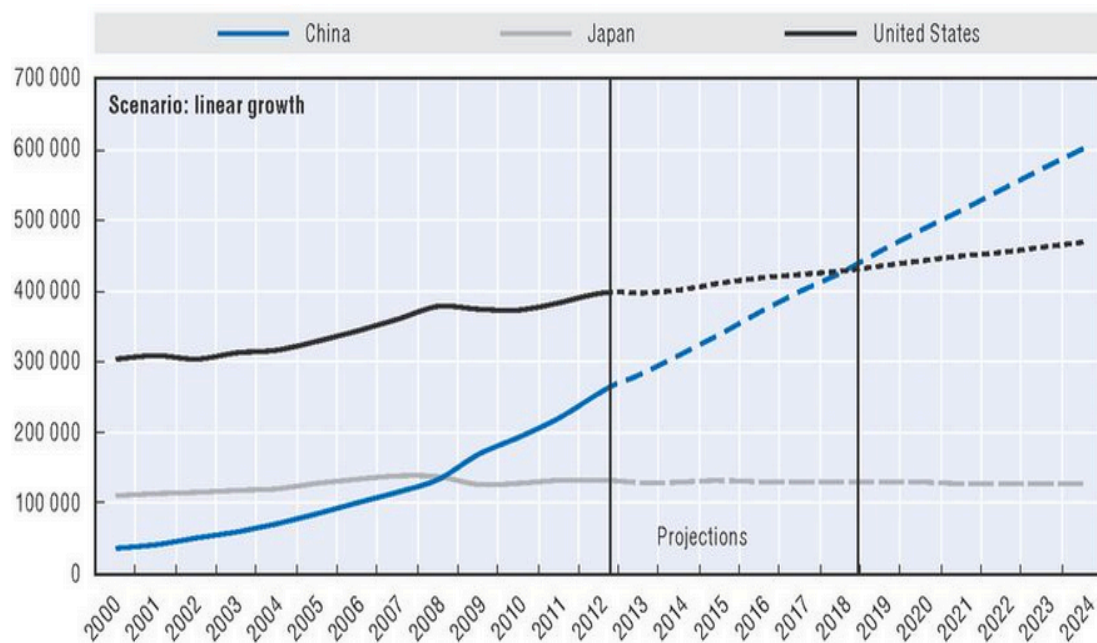


Figure 14. R&D expenditures and future projections for China, Japan and the US (2000-2024).

Source: OECD Science, Technology and Industry Outlook (2014: 58).

## CHAPTER 4

### INPUT-OUTPUT ANALYSIS IN CHINA'S INDUSTRIAL SECTORS (1995-2010)

The present chapter is based on a mathematical model named 'Input-Output Analysis'. Through the application of the model, I aim to display a tangible framework to the ongoing developmental setup of Chinese economy. The calculation will constitute of three parts: first part will solve for the relation of inverse Leontief matrix to unit output change for every unit input. The second part will utilize the results from the first part to compare the favors vis-à-vis the primary and secondary sectors and the last part will consist of an analysis that will check for implications of import substitution industrialization of Chinese sectors. Results obtained from the first analysis will be given in Appendix B, while the others will be presented within the chapter. All the results will be ultimately evaluated to seek for proof of developmental state attributes in Chinese industries.

The reason for running these quantitative analyses is to provide tangible mathematical proof of analogy to the theoretical approach of the developmental state model I have displayed in Chapter 2 that is initially based on the Gershenkeronian model and ultimately been consummated by Chalmers Johnson's systematic description of the Japanese model. This way, it will be proven whether there are promoted and neglected sectors according to the retrospective outline previous developmental states have followed.

#### 4.1 Methodology

'Input-output model' was developed by the Russian-American professor Wassily Leontief in the late 1930, which helped him acquire a Nobel Prize in Economic

Science in 1973. The model is often referred to as *Leontief Model* or *interindustry model*, since it is used to display a clear flowchart in between the producing sectors in an economy and the consuming ones, which may include the particular producing industry per se (Millar and Blair, 2009). Leontief was significantly influenced by Marx's two-sector interrelationship and Quesnay's tableaux equilibrium, yet he was the first one to utilize an extensive use of linear algebra (Clark, 1984) that eventually became an extremely simple model to apply with the widespread availability of super computers. The model was originally intended to serve for Soviet-type planning economies, yet it failed realization due to ideological reasons that was the deep entrenchment of Stalinized economic model in material balance (Cottrell and Cockshott, 1993); nonetheless, it was rather welcomed warmly by the American economists, who still make routine use of the model in the US Department of Commerce (Millar and Blair, 2009). The most important upside of the model can be counted as its simplicity, while the greatest challenge it comprises should be pointed out as gathering the required data. Since the process is normally conducted by National Statistics Institutes, the data used for this research was generated for the "first version of the World Input-Output Database, (which) was constructed within the official WIOD Project, funded by the European Commission as part of the 7th Framework Programme, Theme 8: Socio-Economic Sciences and Humanities... and the database was officially launched on April 16, 2012 in Brussels", <sup>42</sup> as the WIOD provides input-output tables for forty countries worldwide, covering the period from 1995 to 2011.

The simplest form of input-output analysis consists of a set of linear equations that exhibit the distribution of an industry's products throughout the

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<sup>42</sup> Available online at [http://www.wiod.org/new\\_site/project.htm](http://www.wiod.org/new_site/project.htm).

sectors of the economy (Millar and Blair, 2009). Figure 15 provides a simple nominal example for an input-output table, where the *Final Demand*, account for each sector's sales to the final markets and the *Value Added*, stand for the “other (non-industrial) inputs to production, such as labor, depreciation of capital, indirect business taxes, and imports” (Millar and Blair, 2009, p. 3).

		PRODUCERS AS CONSUMERS								FINAL DEMAND			
		Agric.	Mining	Const.	Manuf.	Trade	Transp.	Services	Other	Personal Consumption Expenditures	Gross Private Domestic Investment	Govt. Purchases of Goods & Services	Net Exports of Goods & Services
PRODUCERS	Agriculture												
	Mining												
	Construction												
	Manufacturing												
	Trade												
	Transportation												
	Services												
	Other Industry												
VALUE ADDED	Employees	Employee compensation								GROSS DOMESTIC PRODUCT			
	Business Owners and Capital	Profit-type income and capital consumption allowances											
	Government	Indirect business taxes											

Figure 15. Sample input-output transactions table.

Source: Miller and Blair (2009:2).

For the mathematical explanation of the model, an interindustry matrix should be designated regarding the amount of, say, sector  $i$ 's output required for the production of a so-called sector  $j$ 's output that is represented by  $X_{ij}$  and assumed to be proportional to sector  $j$ 's output of which is relevantly denominated as  $X_j$  (Sadoulet and De Janvry, 1995). Therefore, the input-output coefficient,  $a_{ij}$ , can be formulized as:

$$(1) \quad X_{ij} = a_{ij}X_j, \quad \text{where } i, j = 1, \dots, n, \quad \text{where } i \text{ and } j \text{ correspond to respective sectors in rows and columns.}$$

Letting  $a_{ij}$  technical coefficients sum as a technical coefficients matrix that is denominated by  $A$  of which spans through the entire set of sectors available for any



system in general, total economic output generated within the system  $X_{tot}$  can be computed by the formula:

(2)  $X_{tot} = (I - A)^{-1} * Y$ , where  $Y$  stands for the final demand vector and  $I$  is the diagonal identity matrix; while  $A$  is the aforementioned technical coefficients matrix. The matrix  $(I - A)$  is named after “Leontief” who had solved the equation, as  $(I - A)^{-1}$  is representative of the so-called “Leontief inverse matrix”. Once the ‘Leontief inverse matrix’ is solved for, the result ushers for all the direct and indirect suppliers per one unit of final demand, disclosing all required inputs as:

$$(3) \quad X = (I + A + A^2 + A^3 + \dots + A^n) * Y$$

In order to put it in a more concise measure we obtain the entire set of calculations between the  $a_{ij}$  technical coefficients that correspond to each and every interaction between the primary, secondary and the tertiary sectors by expanding this matrix, which takes not only the final demands but also the intermediate ones into consideration. In this case, direct impacts between the sectors are rendered by the equation:

$$(4) \quad X_{dir} = (I + A) * Y$$

This methodology contains a linear relation between the final demand  $Y_{final}$  and the total output  $X_{tot}$  that provides a simple and efficient calculation method for the change in total output due to any incremental or decremental change in final demand. The same logic applies for any given sector as the change in the final

demand of a particular product can be computed for its effect on the output of any product or sector or the total output of an economy. The linear relation is represented by the following formula:

(5)  $\Delta X_{(tot)} = (I - A)^{-1} * \Delta Y_{(final)}$ , where  $\Delta X$  and  $\Delta Y$  indicates the changes in the ultimate output and demands, respectively. Equation 5 can directly be interpreted to determine the final demand or final supply, if any of these variables are known. Input output tables provided by WIOD delivers the data for total demand, so that the total supply can be determined by the equation down below:

$$(6) \quad X_{(tot)} = (I - A)^{-1} * Y_{(final)}$$

Some cases of the application of the model may require specific input-output models. WIOD renders a model over 35 industries. All figures are provided in their monetary values, which serves as a robust tool for comparative analysis regarding the cost efficiency of any industry. Import and export data are also included in the tables, which serves the auxiliary purpose of accounting for trade balance and GDP; while the amount of exportable production of an economy can be deduced by subtracting the total domestic demand from the domestic production. This also helps the planners in developmental economies since the East Asian development model is export based. A significant deficiency this methodology incorporates should be addressed at this point, which is the hypothetical assumption that supply is infinite. Yet the export-based economies of East Asia should be deemed as satisfying this presumption, since investment on capacity increase is an endemic policy applied by region's successful developers.

The first of the remaining two experiments figures the intersectoral purchases by each sector, as well as the import purchases by each sector. The calculation is carried out by dividing each sectors output to other sector by the total output of that sector in basic prices. Meanwhile the second experiment stands for the ratio of total imports in a single sector to the total intermediate consumption to figure import substitution policies and dependence on imports. Both calculations are simple and easier to carry out vis-à-vis the Leontief matrix.

## 4.2 Results

Input-output tables consist of  $35 * 35$  matrices and the resulting supply matrix that is obtained by solving the Equation 6, naturally gives a matrix of the same size. These matrices are imported here as tables and naturally a table of  $35 * 35$  is not suitable to fit into a page. For this reason, each table is divided into three from the twelfth row and displayed in three consecutive pages. Meanwhile the resulting tables for intersectoral purchases and import, as well as the import substitution analysis will all be given in Appendix B, C and D. Figure 16 displays the import substitution analysis for selected primary and secondary industries of China. The calculation table for figure 16 is given in Appendix E. In other respects, the names of the industries are given in their codes assigned by WIOD, in order to gain more space. The corresponding industries are described with their respective codes down below.

AtB: Agriculture, Hunting, Forestry and Fishing

C: Mining and Quarrying

15t16: Food, Beverages and Tobacco

17t18: Textiles and Textile Products

19: Leather, Leather and Footwear

20: Wood and Products of Wood and Cork

21t22: Pulp, Paper, Printing and Publishing

23: Coke Refined Petroleum and Nuclear Fuel

24: Chemicals and Chemical Products

25: Rubber and Plastics

26: Other Non-Metallic Mineral

27t28: Basic Metals and Fabricated Metal

29: Machinery, Nec

30t33: Electrical and Optical Equipment

34t35: Transport Equipment

36t37: Manufacturing, Nec; Recycling

E: Electricity, Gas and Water Supply

F Construction

50: Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of Fuel

51: Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycles

52: Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of Household Goods

H: Hotels and Restaurants

60: Inland Transport

61: Water Transport

62: Air Transport

63: Other Supporting and Auxiliary Transport Activities; Activities of Travel  
Agencies

64: Post and Telecommunications

J: Financial Intermediation

70: Real Estate Activities

71t74: Renting of M&Eq and Other Business Activities

L: Public Admin and Defence; Compulsory Social Security

M: Education

N: Health and Social Work

O: Other Community, Social and Personal Services

P: Private Households with Employed Persons

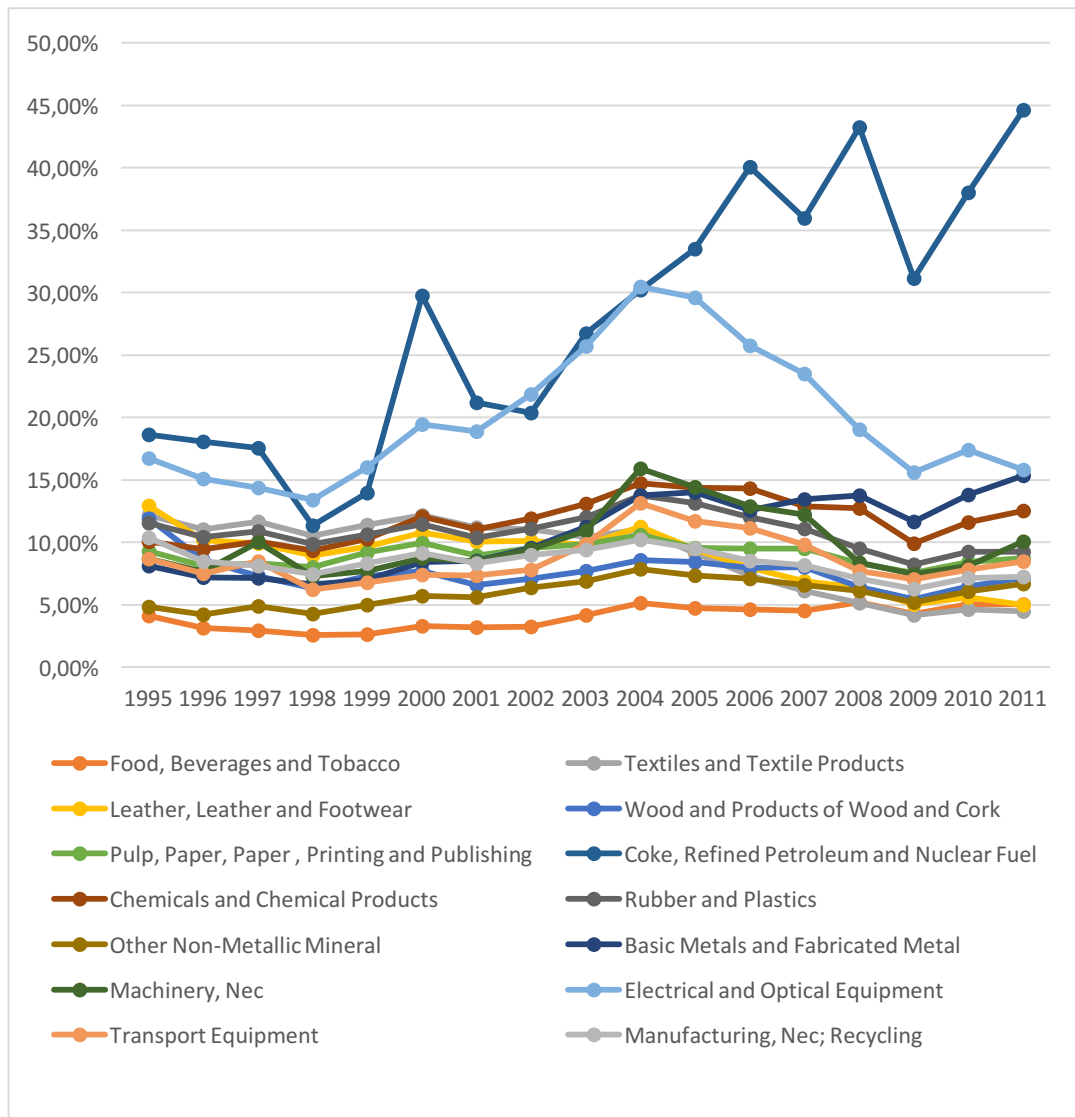


Figure 16. Total imports to total intermediate consumption ratio.

#### 4.3 Discussion

According to the supply matrix results found in the excel matrices of input-output analysis for China's 35 industries between the years 1995-2010 display a developing economy that is still far from reaching the high-tech product levels. The core industry is construction for all years as the \$146.75 billion in 1995 to a whopping \$2.09 trillion in 2010. The numbers climb even in a greater momentum as the years continue. The future data should reveal the construction industry's whereabouts, but

the concerns of speculative excessive investment through government funding; thus forming of a bubble are evident (Akkemik, 2015). Adding the recent slowdown in the property demands would not only effect the Chinese economy, but also the global markets. Concurrently the real estate activities skyrocket in the latter half of the 2000s to reach the level of \$358 billion. This trend can be reasonably explained by the lack of a robust social security system that leads the people to increase their savings (Akkemik, 2015). Nevertheless, the extremely rapid infrastructure investments during the last decade should also be a reasonable explanation to the mesmerizing size of the construction industry, as China has built the largest high-speed rail network of the world in less than a decade (Lei, 2015).

The trade-off in the health and social work sector has increased 17.15 fold, reaching \$300 billion mark by 2011, while the real estate activities have gone through a milder augmentation of 15.61 times. A predicament is encountered on this situation that requires scrutinizing, whether the stronger growth of the expenses on health and social work vis-à-vis the real estate activities are due to government or private demand. It would be a premature inference to attest a strong opinion without further knowledge.

One striking point happens to be in the agriculture sector. The supply figures witness a sudden increase after 2006 and almost doubles until 2011 to exceed \$493 billion. This situation needs a detailed analysis, yet the figures until 2006 shows that the agriculture industry has exhibited an explicitly minor growth compared to other industries; as this situation proves well suitable to the developmental path that is described in this research.

A significant proof for phasing into higher value-added production is that machinery, electrical and optical equipment, and transport equipment has exceeded

the level of \$400 billion. The figures for the year 1995 are respectively \$32.9, \$24.7 and \$28.7 billion. Nevertheless, it is apparent that these figures also increase in a parallel measure to the construction industry.

A very important parameter to be conclusively taken into account is the rapid increment in education expenditure. This cannot be anyhow explained by the sole demand in the private sector as the figures in 2011 almost quadruples the expenses of year 2004 with \$354.9 billion to \$91.7 billion respectively. Investing in education cannot be deemed to witness such an acceleration, solely out of fashion; but the CCP's plans to climb the development ladder requires skilled workers in abundance.

All these arguments should be inferred according to CCP's 12<sup>th</sup> Five-Year Plan (2011-2015) that is covered in the previous chapter and the upcoming five-year plan in 2016 will provide an explicit overview of the scale of development that has been achieved in China and how the course of the economy will be routed. China has already covered a long way on developing world wide brands in information and telecommunication sectors such as Huawei, Lenovo, Xiaomi and many more are imminent to come. With the staggering growth numbers and recent panic caused by the imploding stock markets, China is about to face even a greater challenge to evade the infamous 'middle income trap' and realize "Made in China 2025" (Orr, 2015) program that aims to reach the highest echelons of development by transforming China into 'high-tech production factory of the world', while scaling down state's comprehensive command tools on the market to assume more of a facilitator role within the next decade. Barton, Chen and Jin (2013) illustrate the whereabouts of China's middle class and expects that a proportion over 75% of the urban consumers will be reaching an annual income range of 60,000 to 229,000 renminbi (\$9,000 to



\$34,000).<sup>43</sup> This certainly brings up the question regarding whether the developmental state in China will succeed in ameliorating the retrograding wealth distribution and achieve a higher value-added production cycle that would catch up with its global rivals.

The analysis for the intersectoral purchases and imports show interesting patterns. Primary sector that should supposedly be neglected is surprisingly more self-sufficient as imports are almost completely out of the picture. The results can also be interpreted according to the change in the consumption patterns as well, yet the scope of this research is not supposed to look into the consumption, but rather into production.

While almost all primary sectors have seen higher intersectoral purchasing levels, secondary sectors, namely heavy and chemical industries, have seen lesser increase at somewhat degree (See tables in Appendix B). Nevertheless, if we assume that the heavy industries have seen the highest investment (See Chapter 3) and the economy has grown near double digits mainly based on these sectors. So the relatively horizontal trajectory of self-sufficiency in the secondary sector is not surprising.

Meanwhile the import substitute levels on Figure 16 shows us that year 2004 has been a turning point in many industries in favor of domestic production instead of import substitution (See Appendix D for detailed figures). This may be due to a variety of reasons that need to be separately inquired. Yet the first probable reason that appears in mind is the dramatically increasing FDI after the ascension to WTO in 2001, thus the very fast learning curve of the Chinese, hence their capability to carry out a masterful reverse engineering process enabled them to manufacture

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<sup>43</sup> “All income figures refer to annual household disposable income, in real (2010) terms.” (Barton, Chen and Jin, 2013, p. 1).

generic products in a short time. The soundest example for this is the results for the production and imports for electrical and optical equipment, which have seen a steady and dramatic decrease in imports after 2004 (see respective tables in Appendix C). Year 2009 appears to be another turning point as well since the stagnating world economy was in dire need of increasing Chinese demand, which seems to be met apparently according to Figure 16. Last but not least, the increasing need for energy resources of China such as oil and gas, seems like the most blatant indicator for the skyrocketing imports, except a brief and short fall during the 2008 global economic crisis. Last but not least, the construction industry singles out as a very import free zone, which is not unexpected as it always has been the leading industry of China.

## CHAPTER 5

### CONCLUSION

This dissertation has tried to bring an analytical explanation to the whereabouts of the developmental state political economy model in China since the beginning of the ‘reform’ period, while trying to shed some light from the Maoist legacy as well. In order to understand and designate the existence of Chinese developmental state, a thesis outline of four chapters were followed prior to this one. The initial chapter gave a brief definition to the theory East Asian Developmental State model and its background. This model that has evolved in the academic discussion from the Gerschenkronian model initially, which was followed by the ‘flying geese’ model and finally the Japanese development model framed by Chalmers Johnson in early 1980s. As the developmental state discussion flared up after the release of Johnson’s book *MITI and the Japanese miracle: the growth of industrial policy: 1925-1975*, the prominent examples who have shown significant similarities with Japan, namely South Korea and Taiwan became the pretext for academic circles to name the model as the East Asian Developmental State Model. Following chapter starts with explaining in detail the political economy these nations have followed during their fast track development process. Some other resembling examples are also vaguely discussed in this chapter. The story of how the developmental state became obsolete was also thoroughly told. The third and fourth chapters formed the main frame of the thesis, as the political economy of Chinese developmental state was analyzed based on a linear history discourse. The fourth chapter comprised of multiple mathematical analysis based on the Nobel Laureate economist Wassily Leontief’s model to monitor the intersectoral economic activities within an implicit economy as well as its import

affiliation. This model is called input-output analysis and run through the data collected by WIOD and provided as input-output tables provided for 35 sectors of China between 1995-2011. A more detailed summary of this research is presented as follows:

The theoretical roots of the East Asian developmental state, lie in the Alexander Gerschenkron's 1951 article *Economic Backwardness in Historical Perspective*. According to this theory, the early developer is Great Britain has realized the Industrial Revolution earlier than the German Empire, where a fast catching up process took place. Meanwhile Russia is the most backward country, which requires significant state intervention in order to level the economic development with these two nations that have gone through this process priorly, hence going through significantly less competition, while enjoying a less stressful time frame. In the early stages of development, the consumption is suppressed and standard of living is reasonably low. This process is significantly reminiscent of the development story of the USA, Japan and China vis-à-vis Great Britain, German Empire and Soviet Russia respectively. I took this theory and tried to adopt it into Japan and China's case in East Asia designating the starting point as the US as Americans had already become the ultimate economic power of the world by WWI, Japan had gone a long way with its economic development prior to the Pacific War and picked up quickly and to become a very developed country by the end of 1970s. Meanwhile China was still a very backward country that required incessant state intervention to achieve a rapid economic development. The 'reform' period starting with Deng Xiaoping's ascension to power and the latter CCP administrations stand witness to this story.

The ‘flying geese’ model is also a very prominent benchmark to pry open the compatibility of China’s political economy to developmental state theory. This model took part in four steps of climbing up the ladder of development; from low value added labor-intensive production to reverse engineering and exporting these reverse engineered products that are gradually more and more capital intensive. The final step is to produce innovative products with new technologies that provide state-of-the-art goods and services. China clearly seems to follow this path; which Japan had followed during the post-WWII years. Recent years show clear proof that China is moving to the fourth stage of the ‘flying geese’ model and the upcoming years will serve as the watershed for China, whether to consolidate its spot as one of the highest value-added technology producers in the globe or not.

As these two models shed decent amount of light, it’s easier to spot China’s footsteps on the path to achieving the East Asian developmental state model pioneered by Japan. A state engineered political economy that suppressed consumption in the early stage to generate the vital funds for necessary investments was carried out and huge sums of foreign direct investment was obtained thanks to the cheap labor forces. This helped China to kick start the reverse engineering process, which sped up blatantly following China’s ascension to WTO in 2001. State owned enterprises and mammoth state banks have controlled the financing of investments according to the interest of the CCP. This is very similar to the ‘main bank’ system Japan had constituted in the center of its huge *keiretsu* conglomerates, which had to concur to the political economy outlines dictated by MITI. I deem the fact that the banks in China being owned by the state, while the banks in Japan being private as a minor difference, since top level state officials end up managing these private banks and corporations. Meritocratic culture has been a historical attribute of

China's state tradition of civil servant examination despite the ubiquitous corruption. We can assume that lack of quality is not a problem when it comes to recruitment of state officials. Meanwhile although Japan has been unique to have an uninterrupted democracy during the post-WWII era, yet it has been enforced by the Americans after the occupations and the political system has barely ever given the chance for another political party other than the right wing Liberal Democrat Party of Japan. On the other hand, South Korea and Taiwan has achieved the economic development and carried out the aforementioned developmental political economies under despotic dictatorships. These also stand as a proof that CCP's authoritarian administration is compatible with another attribute of the East Asian developmental state model. The similarities are apparent, abundant and non-negligible although the applications are usually *sui-generis* to China. Yet there are serious deviations to scrutinize, most prominently the destruction of egalitarian society and high levels of corruption, which are covered in the end of this conclusion. Last but not least, both Japan and China has kept serious distance to foreign debt, yet China has welcomed foreign financial aid, just like South Korea and Taiwan during their early stages of development for establishing a firm infrastructure.

We have seen in Chapter 1 that during the second half of the 20<sup>th</sup> century the science of economics was condemned to a dualistic approach of capitalist market economy versus communist command economy that saw no third option as a reasonable competitor. Having started with the Meiji Restoration in late 19<sup>th</sup> century, the Japanese Empire started to develop a *sui generis* model of economic development that adopted a non-doctrinal/non-ideological path as we know in modern social sciences, in order to achieve its cause without being confined into the hegemonic dichotomy of 'Capitalism' and 'Communism/Socialism', as not even the

ultimate destruction of the World War II did not take Japan from succeeding economic achievements that has been regarded as ‘miraculous’ by prominent political economy scholars of late 20<sup>th</sup> century. This exceptional growth pattern that was achieved in approximately three decades during a time when the US allowed Japan to implement its own political economy due to Japan’s absolute vitality to the US hegemony as Communist threat was panting behind Japan’s neck. This period of ‘free ride’ enabled Japan to achieve a state led economic model that achieved unprecedented growth levels until its time, hence ended up being called as the ‘Japanese miracle’. As the ‘miracle’ became prominent in the 1970s, it inevitably found its popularity in the academic world. However, within all the researches that concentrated on Japan’s outstanding development, Johnson’s *MITI and the Japanese miracle: the growth of industrial policy: 1925-1975* (1982) was the most daring and analytic work that opened a new stream to the science of economy ever since. Johnson’s ‘developmental state’ theory was apparently influenced by the Gerschenkronian and the ‘flying geese’ models, those of which eventually led to the final resort of this proposed theory to be imprinted into the political economy literature as the ‘East Asian Developmental State’ model. But my understanding as the main reason behind condemning of the model to a geographic definition all the way from the start instead of a Japanese model is presumably once again the hegemonic political reflex to confine ‘theory making’ privilege as a bi-polar world monopoly globally and especially a US prerogative at a time when the Soviet regime was showing clear signs of faltering. The public opinion was set to receive Japan’s rise in the early 1980s as a threat to the national economy of the United States because of the perennial trade surpluses of Japan in bilateral trade. Imminently and concurrently, the topic became a matter of intense hesitation in the US academic

circles, as well as the political ones. Conceding to a dark horse of so-called ‘Japanese model’ would be unacceptable for those who have continued the ‘Cold-War’ for four decades. Yet Johnson’s assertion on a ‘Japanese model’ could readily be explained, since the best examples of the ‘East Asian model’ were ex-Japanese colonies, namely Taiwan and Korea. Nevertheless Amsden (1992) had displayed the case of Korea and Wade (1990) had presented his seminal work on East Asian development, Japan’s indelible imprint on region’s state-led and export oriented development model was ameliorated into a regional case at ease, and the aftermath of Plaza Accord (1985) which was imposed by the US on Japan and Germany led to the *bubble economics* in Japan within a few years and eventually ended up in an overwhelming stagnation in the 1990s that was called the ‘lost decade’, disposing any chances of the ‘Japanese model’ to be a universal political economy alternative as well as causing Japan to miss out from the ‘once in a lifetime’ chance of filling the political economy void that surfaced after the collapse of the Soviets. Eventually, the furthest Japan could ever come near the doors was Turkey, where glorious celebrations of Toyota’s grand opening left its place to a blank silence after the assassination of Özdemir Sabancı.

Perhaps the single most important characteristics of this development model was the industrial policies administered by certain institutions in each case. This was also the starting point of Johnson (1982) as Ministry of International Trade and Industry (MITI) was the post-WWII institution of Japan that was initially governed by the pre-war bureaucrats, which envisioned an industrialization model that climbed the ladder of value-added production to eventually reach the state-of-the-art industrial facilities. Although development was left into the hands of Japan’s brightest children that were employed as state cadres who were recruited from the



best universities of the country, Japan remained as a synthetic and stable democracy in the post-war era, while Korea and Taiwan lacked such a quality even though they shared many other common attributes with the Japanese developmental state model. Nevertheless, economic development was the priority of the dictatorships in both countries, as their societies eventually demanded democracy after achieving a considerable economic growth alongside minimal of corruption and equal wealth distribution compared to the rest of the developing world.

Japan and Korea had very similar business environments that accumulated capital in “main banks” and juxtaposed their huge conglomerates around these banks; hence achieving to create world class brands that were able to penetrate the biggest global markets in a wide range of products. The former *zaibatsu* in Japan, which enabled the Japanese fascist military regime to realize a war economy thanks to the symbiotic relations of state and zaibatsu circles. After Japan lost the Pacific War and was occupied by the US, the zaibatsu was slightly restructured according to the new democratic regime that set off to build a market economy, hence the end product was the *keiretsu* that was concentrated in a condensed web of ownership that made the domestic industries impenetrable during their infancy. The role of ‘main bank’s which lied in the center of the keiretsu corporate model was the most critical attribute of the system that enabled a checks and balances mechanism between MITI and keiretsu, controlling the funding system for the companies according to the national developmental political economy that favored no interest group. Hence the Japanese companies were able to climb the ladder of development and become the most advanced technology production center of the world in a matter of short time. On the other hand, Korean *cheabols* consistently remained on track to help Korea become an unabated export-machine, while Taiwan achieved a significantly different model

that depended on small and medium sized business groups, yet still managed to become a huge factory of high value added production of the world.

The heyday of the East Asian developmental state came to a virtual end for these nations with the staggering Asian financial crisis of 1997 as the world was on an apparent track of relentless ‘globalization’ in the aftermath of the downfall of the Eastern Bloc, thus there could be no better place to start, but the national eco-systems that relied on state’s intervention. Japan sought the remedy to its rooted stagnation via an incessant liberalization process, where privatization and deregularization took away the most of the command power that remained within the grasps of these state institutions.

The ‘East Asian developmental state’ is obviously not the single case or attempt of a developmental state as France is considered as a successful ‘developmental state’ story according to Loriaux (1999), while Brazilian, Mexican cases are failed examples in South America (Schneider, 1999) and India (Herring, 1999) is also another failed sample due to failing to achieve the main attributes of a developmental state.<sup>44</sup>

Although it seemed like the East Asian developmental states waned with the triumph of globalization, China started to display a unique late-development case because of the protracted communist economic structure inherited from the Maoist regime. After Deng Xiaoping’s ascension to power in Chinese Communist Party in 1978, a fundamental paradigm shift was introduced to the economy and the ‘reform’ proponents enjoyed a significant degree of freedom to experiment a new set of policies, which quickly changed the lives of many Chinese by opening up the country to the world. This radical change overtly deviated from East Asian

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<sup>44</sup> All cases are thoroughly examined in Woo-Cumings’ *The developmental state* (1999).

developmental state pattern as the distribution of wealth was not disseminated equally and Deng's leitmotiv for the early times of reform in China, "let some people get rich first", gave way to social disturbance in a society that was well used to a significant degree of equality. China, a country which had one of the lowest Gini coefficient levels for a long period, started to drift away from its egalitarian position in a quick fashion. All in all, the unharnessed and ambitious liberalization in order to obtain technology and investment did not satisfy the expectations of the society as well as Deng Xiaoping, and ended up exasperating the situation for the Communist Party rule. With the culmination of anger, the Tiananmen protests broke out in 1989, which forced Deng Xiaoping to summon use of violence and ensure the legitimacy of the Party. Yet the party elders did take their lessons from the previous mistakes they had made during the 'reform' stage that kept the state mentality on an unorthodox track to be less restraining. The course of the 'reform' was reset after Deng set off on his famous Southern Tour in 1992, which was followed by 14th Central Committee of the CCP when Deng had done his due diligence to restore the balance and retired from the political scene to leave the Party into his capable successor Jiang Zemin to carry out the more conservative, yet not in the least less ambitious development program of CCP. The state was brought back into the equilibrium in full measure after the 14<sup>th</sup> Central Congress and the results started to show themselves at once.

Jiang Zemin administration institutionalized the consistency within the party and started the preparatory steps to merge with the globalized market system on a milder liberalization track, which helped China to avoid devastating effects of the 1997 East Asian financial crisis without losing much of its momentum. China's long

tradition of avoiding foreign debt and budget deficits enabled them to be the most durable economy during Asian financial meltdown.

In 2001, People's Republic of China finally reached one of the most important watersheds of its history that is accession to World Trade Organization. Until that moment, China was attracting decent amount of FDI and financial aid, especially from Japan, which clearly helped China to keep the ship afloat. Following the joining to the WTO, China became a top FDI receiver, which not only gave them a period of fast track growth when the US was preoccupied with two wars and an eventual financial meltdown in 2008, but also an immense amount of technology inflow that helped China to climb the ladder of development very quickly thanks to their fast learning curve alongside the necessary developmental policies enforced by the central government. This fast track economic growth was sustained through a longer time even vis-à-vis Japan, China was able to become the second largest economy in about three decades after the beginning of 'reform' era and started being called the 'factory of the world' due to its subtle policies to attract Foreign Direct Investment, which was kicked off by setting up the Shenzhen Special Economic Zone in 1980 and followed by a distinct developmental political economy, which was sometimes rather risky, while being conservative at other times.

China utilized its interventionist attribute to its advantage for a great deal also during the global financial crisis in 2008, and evaded yet another major crisis (the other one being the 1997 Asian financial crisis) with minor wounds. During the course of 12<sup>th</sup> five-year plan (2011-2015), it has become evident for Chinese industries to climb to the peak of the ladder of development, since many IT, telecommunication and smart-phone oriented companies have reached global prominence, while enjoying the largest domestic market in globe to prop a shift from

an export-based/low-technology nation to one that is consumption based/high-technology.

In order to present quantitative support for the developmental characteristics of China, an input-output analysis has been conducted across 35 sectors Chinese national economy between the years 1995-2011. Collateral to the input-output analysis, two more models were run to see the import dependency of the Chinese economy, as well as the implicit sufficiency of each sector and their tendencies to utilize exports. The results show supportive proof to the theory that China is still on course of its development process, yet the unbridled volume of construction industry until 2011 is showing signs that excessive investment is still ongoing and might effect a healthy course of transition to a consumption based developed economy, meanwhile the easy access to credits might give the perception of an artificial wealth in the society (Pettis, 2016), hence causing the debt-serviceability limits to be reached to stagnate the economy and create a significant bubble in the real-estate sector that is one of the sectors most apt to rent-seeking. Domestic intersectoral purchases, has overtly increased, showing clear signs of the production power of China according to the input-output analysis that has been carried out in Chapter 4. Meanwhile the demand for imports have significantly dropped except for energy resources, which gives us the impression that not only China has become an implicitly sufficient economy on productive terms, but also an aggressive policy on energy resources will be followed for sure. Nevertheless, the secondary sector has acted as the pillar of the Chinese economy, clearly indicating existence of developmental state qualities, which should not be expected to wither away any time soon due to the ongoing transition to the high value added production and

consumption based economy, which seems like the ultimate challenge China is going to face during this last stage on the course of development.

For the last act of the course of development, the Chinese developmental state faces two main challenges that have stayed as persistent downsides of China's national political economy. These are the major deviations from the East Asian developmental state concept, which Japan was the *avant-garde* of. The first one is high levels of corruption, while the other one being the egalitarian society that is directly correlated to the infamous middle income trap. The Xi Jinping administration is trying to attend to the prior deficiency by running a massive anti-corruption campaign<sup>45</sup> and transfer of wealth to the household sector in order to avoid 'middle income trap' and create a more egalitarian society. This requires a better distribution along with a redistribution of wealth in order to spread the middle income to a greater society base to avoid middle income trap, as well as avoiding a hard financial meltdown, which might plunge the economy into a stagnation similar to the one in Japan during 1990s. In this case, economic growth would diminish and would require very significantly tough measures to reset back on a healthy growth course (ibid). Thus the slower, but higher quality growth is imperative for China not because it is a policy CCP chooses to follow, but for it poses a serious threat to the national economy of China.

The imperative solution is prescribed through different perspectives as Acemoğlu & Robinson (2012) describes the key necessity for change as the institutional reform that China must undergo to avoid failing on their quest for becoming a developed country by becoming democratically more inclusive. Meanwhile Michael Pettis from Peking University, constantly reiterates the

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<sup>45</sup> For an impressive visualization of the campaign, see <https://www.chinafile.com/infographics/visualizing-chinas-anti-corruption-campaign>.

inevitability of wealth transfer to the household sector from the state sector in order not to inflict a hard-knock rebalancing that might arrive before escaping from the middle income trap. My opinion is that China's main goal is to raise the income levels of the society over the middle income trap before starting a gruesome rebalancing process that might diminish the growth levels to 1-2 per cent. The global financial crisis of 2008 has not cleansed the guts of the corruption within the system and pushed the debris to an uncertain future, where and when the US can possibly evade being the scapegoat. Meanwhile, no matter how much the US wants to restrain China in regional political issues through Japan, North Korea and so on, the end of American hegemony has a good chance to take place, yet it is too early to speak. The abundant amount of American treasury bonds China owns is their insurance, while the ultimate control over the banking sector, immature stock markets and very low foreign debt happens to be the fuse of the developmental state politics that China is still following. This way, China can prevent speculations in its financial markets that brings the desired stability by the CCP during this process and in the meantime, non-performing credits and insolvent banks can be rapidly acquired by massive state banks such as ICBC. Hence the institutional reform Acemoğlu & Robinson are expecting from China is not probable to take place any time soon, while China has no valid reason to believe that the recipe to their success is harbored in such a political economy, since constant regularization, privatization and institutional reform has taken Japan to nowhere after the 'lost decade' and the East Asian Developmental State model has shown its 'miraculous' success in South Korea and Taiwan during dictatorships that were politically less democratic than what China was today. All of these nations have become rare examples to avoid the middle income trap in the post WWII era.

## APPENDIX A

### JAPANESE INDUSTRIAL POLICIES UNDER MITI'S LEADERSHIP (1950-1973)

#### *General aspects and goals*

- Long-term vision for Japan's industrial economy
- Special legislations for developing the top-priority industries
- Annual goals for each industrial sector (with the mutual agreement between MITI and private sector)

#### *Policies for developing the industry*

- Tax incentives
- Providing finance to companies
  - \* Japanese Development bank and other banks
- Industrial structure
  - \* Long-term production and concentration choice for the market
  - \* Encouraging mergers (rationalization)
  - \* Investment and production guidance

#### *Risk mitigation*

- Cartelization against recession
- Public procurements

#### *Technology development*

- Designation of priorities for the technologic development fields
- Supporting production and service technologies
- Keeping technology licenses under control
- R&D subsidies
- State-funded research projects
- Conducting basic research in state laboratories
- Guidance in administrative fields
- Flexibility in making decisions for newly arising circumstances

#### *Antitrust*

- Exemption in selected fields
- Flexibility in application

#### *Labor force policies*

- Employment parallel to the industrial policy

#### *Coordination of consensus through the general of industry*

- Close cooperation between MITI and the industry

#### *International interface*

- Protecting infant industries
- Non-tariff barriers
- Keeping foreign investment under control (until 1970s)
- Providing foreign exchange to selected sectors and companies



- Export subsidies
- \* Tax reductions
- \* Providing knowledge about foreign markets
- \* Trade finance
- \* Mediation in case of commercial litigations

*Economic security*

- Buying and storing raw materials

*Multilateral activities*

- Joining international events
- International capital flow
- Exchange rates
- Outbound investments

Note: The translation belongs to me; therefore, I assume responsibility for any possible misunderstanding that might be allowed due to my mistakes.

Source: Yülek, M. A. (2015). *Kalkınma Tartışmalarında Japon Modelinin Yükselişi, Düşüşü ve Tekrar Yükselişi. Doğu Asya Ekonomi Politikası: Kalkınma, Siyaset, Jeostrateji*, • İstanbul: Boğaziçi Üniversitesi Yayınları.

## APPENDIX B

### INTERSECTORAL PURCHASES BY SECTOR BETWEEN 1995-2011<sup>46</sup>

Intersectoral Purchases, China, 1995.

	1516	1718	19	20	21122	23	24	25	26	2728	29	3033	3435	3637	F
1516	11.0%	0.2%	9.5%	0.2%	0.3%	0.1%	2.0%	0.3%	0.3%	0.1%	0.2%	0.2%	0.2%	0.4%	0.2%
1718	0.2%	29.3%	8.4%	1.8%	2.4%	0.2%	1.3%	6.6%	1.0%	0.4%	0.8%	0.3%	0.8%	7.0%	0.3%
19	0.1%	0.9%	18.1%	0.8%	0.3%	0.1%	0.2%	0.6%	0.2%	0.2%	0.3%	0.2%	0.3%	1.4%	0.1%
20	0.1%	0.2%	0.3%	21.7%	0.6%	0.1%	0.4%	0.3%	0.9%	0.5%	0.4%	0.4%	0.5%	8.3%	2.6%
2122	1.9%	0.6%	0.8%	1.3%	24.2%	0.1%	1.5%	1.2%	3.7%	0.4%	0.5%	1.4%	0.5%	3.0%	0.2%
23	0.3%	0.5%	0.3%	0.6%	0.7%	4.3%	2.9%	1.9%	2.4%	2.0%	0.9%	0.7%	0.8%	0.8%	2.0%
24	1.1%	6.3%	2.3%	3.7%	4.2%	1.5%	21.0%	20.1%	2.9%	1.3%	1.2%	3.4%	1.3%	4.3%	1.4%
25	1.2%	0.9%	3.0%	0.7%	1.7%	0.5%	2.9%	13.0%	2.0%	0.7%	2.5%	5.2%	4.6%	3.4%	0.8%
26	0.8%	0.4%	0.3%	1.3%	0.8%	1.0%	1.9%	0.7%	13.6%	2.6%	1.4%	3.6%	1.6%	1.4%	24.4%
2728	1.0%	0.6%	1.1%	2.5%	1.4%	1.0%	2.1%	2.0%	5.7%	34.1%	20.0%	14.7%	12.9%	8.6%	12.7%
29	0.4%	1.0%	0.5%	0.8%	1.4%	1.6%	1.4%	1.0%	2.3%	2.5%	12.7%	2.5%	8.6%	1.0%	2.3%
3033	0.2%	0.4%	0.2%	0.3%	0.7%	0.7%	0.7%	0.6%	0.8%	1.0%	4.6%	16.5%	2.7%	1.1%	3.3%
3435	0.2%	0.1%	0.1%	0.3%	0.5%	0.4%	0.4%	0.3%	0.5%	0.6%	2.3%	0.4%	21.0%	0.4%	0.4%
3637	0.1%	0.2%	0.2%	0.2%	1.0%	0.1%	0.2%	0.2%	0.3%	0.8%	0.3%	0.2%	0.2%	1.2%	0.2%
F	0.7%	0.8%	0.2%	1.6%	2.7%	1.9%	4.1%	1.8%	4.0%	3.7%	1.5%	0.8%	0.9%	0.9%	0.6%

<sup>46</sup> Conditional formatting for tables in Appendix C are as follows: Green: Above average; Yellow: Top 10%; Red: Top 10.

Intersectoral Purchases, China, 1996.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	11.9%	0.2%	9.9%	0.2%	0.4%	0.1%	2.1%	0.4%	0.4%	0.1%	0.2%	0.2%	0.2%	0.4%	0.3%
1718	0.2%	29.7%	8.5%	1.8%	2.5%	0.2%	1.4%	6.8%	1.0%	0.4%	0.8%	0.3%	0.9%	6.7%	0.3%
19	0.1%	1.2%	21.3%	1.0%	0.4%	0.1%	0.2%	0.7%	0.3%	0.3%	0.3%	0.2%	0.4%	1.6%	0.1%
20	0.1%	0.2%	0.3%	23.5%	0.7%	0.1%	0.5%	0.3%	1.0%	0.5%	0.5%	0.4%	0.6%	9.1%	2.8%
2122	2.0%	0.6%	0.8%	1.3%	24.9%	0.1%	1.6%	1.3%	3.9%	0.4%	0.6%	1.5%	0.6%	3.1%	0.2%
23	0.2%	0.4%	0.3%	0.5%	0.6%	3.8%	2.7%	1.7%	2.2%	1.9%	0.9%	0.7%	0.7%	0.6%	1.9%
24	1.0%	6.3%	2.0%	3.7%	4.2%	1.6%	21.7%	19.9%	3.0%	1.4%	1.2%	3.6%	1.4%	4.2%	1.5%
25	1.3%	1.0%	3.1%	0.7%	1.8%	0.5%	3.2%	14.9%	2.2%	0.9%	2.9%	6.0%	5.1%	3.8%	0.9%
26	0.8%	0.4%	0.3%	1.3%	0.8%	1.1%	2.0%	0.8%	14.4%	2.8%	1.4%	3.7%	1.6%	1.4%	25.4%
2728	0.9%	0.6%	1.0%	2.4%	1.4%	1.0%	2.1%	1.9%	5.7%	34.9%	20.0%	14.7%	13.1%	8.0%	12.3%
29	0.4%	0.9%	0.4%	0.7%	1.3%	1.6%	1.4%	0.9%	2.3%	2.5%	12.3%	2.4%	8.5%	0.9%	2.2%
3033	0.2%	0.4%	0.2%	0.3%	0.8%	0.8%	0.7%	0.6%	0.8%	1.0%	4.7%	17.1%	2.8%	1.1%	3.5%
3435	0.2%	0.1%	0.1%	0.3%	0.6%	0.4%	0.4%	0.3%	0.5%	0.6%	2.3%	0.4%	21.3%	0.3%	0.3%
3637	0.1%	0.2%	0.2%	0.3%	1.2%	0.1%	0.2%	0.2%	0.3%	1.0%	0.3%	0.3%	0.2%	1.2%	0.2%
F	0.7%	0.7%	0.2%	1.3%	2.4%	1.8%	3.8%	1.7%	3.5%	3.6%	1.4%	0.7%	0.9%	0.8%	0.6%

Intersectoral Purchases, China, 1997.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	12.3%	0.2%	10.4%	0.2%	0.4%	0.1%	2.1%	0.4%	0.4%	0.1%	0.2%	0.2%	0.2%	0.4%	0.3%
17118	0.2%	27.9%	8.2%	1.7%	2.4%	0.2%	1.3%	6.4%	0.9%	0.3%	0.8%	0.3%	0.8%	5.7%	0.3%
19	0.1%	1.2%	20.9%	0.9%	0.3%	0.1%	0.2%	0.7%	0.2%	0.3%	0.3%	0.2%	0.4%	1.5%	0.1%
20	0.2%	0.2%	0.3%	24.9%	0.7%	0.1%	0.5%	0.3%	1.1%	0.6%	0.5%	0.4%	0.6%	9.6%	2.9%
21122	2.0%	0.6%	0.8%	1.3%	24.6%	0.1%	1.6%	1.3%	3.8%	0.4%	0.5%	1.5%	0.6%	3.0%	0.2%
23	0.2%	0.4%	0.3%	0.5%	0.6%	3.6%	2.8%	1.8%	2.2%	1.9%	0.8%	0.7%	0.7%	0.6%	2.0%
24	1.0%	6.0%	1.9%	3.4%	3.9%	1.5%	20.5%	18.7%	2.8%	1.3%	1.1%	3.3%	1.3%	3.7%	1.3%
25	1.3%	1.0%	3.2%	0.6%	1.8%	0.5%	3.3%	16.0%	2.2%	0.9%	2.9%	6.1%	5.0%	3.7%	0.9%
26	0.8%	0.4%	0.3%	1.3%	0.8%	1.1%	2.0%	0.8%	14.9%	2.9%	1.4%	3.8%	1.6%	1.4%	25.6%
27128	0.9%	0.6%	0.9%	2.3%	1.4%	1.0%	2.1%	2.0%	5.8%	35.4%	19.8%	14.7%	13.4%	7.8%	11.9%
29	0.3%	0.8%	0.4%	0.6%	1.2%	1.4%	1.2%	0.9%	2.0%	2.3%	10.3%	2.1%	7.6%	0.8%	1.9%
30133	0.2%	0.4%	0.2%	0.4%	0.9%	0.9%	0.8%	0.7%	0.8%	1.1%	5.0%	18.7%	3.0%	1.1%	3.8%
34135	0.2%	0.1%	0.1%	0.3%	0.6%	0.4%	0.4%	0.3%	0.5%	0.6%	2.2%	0.4%	21.4%	0.3%	0.3%
36137	0.1%	0.2%	0.2%	0.2%	1.2%	0.1%	0.2%	0.2%	0.3%	1.0%	0.3%	0.2%	0.2%	1.0%	0.2%
F	0.8%	0.8%	0.3%	1.4%	2.8%	2.2%	4.4%	2.0%	3.9%	4.1%	1.5%	0.8%	1.1%	0.9%	0.7%

Intersectoral Purchases, China, 1998.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	12.6%	0.2%	9.6%	0.2%	0.4%	0.1%	2.0%	0.4%	0.4%	0.1%	0.2%	0.2%	0.2%	0.4%	0.3%
1718	0.2%	31.1%	8.1%	1.3%	2.3%	0.2%	1.4%	5.8%	1.0%	0.4%	0.9%	0.3%	0.8%	6.4%	0.3%
19	0.1%	1.2%	24.1%	0.7%	0.3%	0.1%	0.2%	0.7%	0.2%	0.2%	0.3%	0.2%	0.4%	1.7%	0.1%
20	0.1%	0.1%	0.2%	27.2%	0.9%	0.1%	0.4%	0.3%	0.9%	0.6%	0.5%	0.4%	0.5%	9.4%	3.3%
2122	1.9%	0.6%	0.8%	1.1%	24.3%	0.1%	1.6%	1.2%	3.6%	0.4%	0.5%	1.4%	0.5%	3.0%	0.2%
23	0.2%	0.3%	0.2%	0.5%	0.5%	3.6%	2.8%	1.4%	2.0%	1.8%	0.7%	0.5%	0.5%	0.5%	1.8%
24	0.9%	5.4%	1.9%	3.9%	4.1%	1.6%	20.8%	18.5%	2.9%	1.3%	1.1%	2.9%	1.3%	3.5%	1.5%
25	1.4%	1.0%	3.0%	0.6%	2.0%	0.6%	3.5%	17.1%	2.2%	0.9%	3.2%	6.0%	4.9%	3.8%	0.9%
26	0.8%	0.4%	0.3%	1.0%	0.8%	1.0%	2.0%	0.9%	15.5%	2.9%	1.3%	3.6%	1.4%	1.4%	23.2%
2728	0.8%	0.5%	0.8%	2.0%	1.3%	1.1%	1.9%	2.0%	5.5%	35.4%	19.8%	13.1%	12.8%	7.2%	12.4%
29	0.3%	0.8%	0.4%	0.7%	1.2%	1.5%	1.3%	0.9%	2.3%	2.4%	12.2%	2.2%	8.0%	0.8%	2.4%
3033	0.2%	0.4%	0.2%	0.4%	0.8%	1.0%	0.8%	0.7%	0.9%	1.1%	5.2%	21.7%	3.0%	1.2%	3.7%
3435	0.2%	0.1%	0.1%	0.3%	0.6%	0.4%	0.4%	0.4%	0.4%	0.7%	2.1%	0.4%	23.1%	0.3%	0.3%
3637	0.1%	0.2%	0.1%	0.2%	1.1%	0.1%	0.1%	0.2%	0.3%	1.0%	0.3%	0.2%	0.2%	1.0%	0.2%
F	0.8%	0.9%	0.3%	1.6%	2.6%	2.5%	4.7%	2.1%	4.1%	4.4%	1.7%	0.9%	1.2%	1.0%	0.9%

Intersectoral Purchases, China, 1999.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	12.9%	0.1%	9.3%	0.1%	0.3%	0.0%	1.8%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.3%	0.2%
17118	0.2%	31.6%	7.5%	1.0%	2.0%	0.2%	1.2%	4.4%	1.0%	0.4%	0.9%	0.3%	0.7%	6.1%	0.4%
19	0.1%	1.0%	24.4%	0.5%	0.2%	0.1%	0.2%	0.7%	0.2%	0.2%	0.2%	0.1%	0.3%	1.6%	0.1%
20	0.1%	0.1%	0.2%	28.4%	1.1%	0.1%	0.3%	0.3%	0.7%	0.6%	0.4%	0.3%	0.4%	9.2%	3.6%
21122	1.8%	0.6%	0.8%	1.0%	23.6%	0.1%	1.4%	1.1%	3.3%	0.3%	0.5%	1.3%	0.4%	2.9%	0.1%
23	0.2%	0.3%	0.2%	0.5%	0.6%	3.6%	3.2%	1.3%	2.1%	2.0%	0.7%	0.5%	0.5%	0.6%	1.8%
24	1.0%	5.5%	2.2%	4.4%	4.6%	1.6%	21.6%	19.5%	3.1%	1.4%	1.2%	2.7%	1.4%	3.5%	1.7%
25	1.4%	1.0%	2.9%	0.6%	2.0%	0.5%	3.3%	17.2%	2.0%	0.8%	3.3%	5.5%	4.6%	3.7%	0.8%
26	0.8%	0.4%	0.3%	0.8%	0.7%	0.9%	1.8%	0.9%	15.4%	2.9%	1.3%	3.5%	1.3%	1.4%	21.0%
27128	0.8%	0.4%	0.7%	1.8%	1.1%	1.1%	1.7%	2.0%	5.2%	34.8%	19.5%	11.7%	12.4%	6.9%	12.7%
29	0.3%	0.9%	0.4%	0.7%	1.1%	1.4%	1.3%	0.9%	2.4%	2.4%	13.2%	2.2%	8.0%	0.8%	2.7%
30133	0.2%	0.4%	0.3%	0.4%	0.8%	0.9%	0.8%	0.7%	0.9%	1.0%	5.3%	22.6%	3.0%	1.2%	3.5%
34135	0.2%	0.1%	0.1%	0.3%	0.6%	0.4%	0.3%	0.3%	0.4%	0.6%	1.8%	0.4%	23.2%	0.3%	0.3%
36137	0.1%	0.2%	0.1%	0.2%	1.0%	0.1%	0.1%	0.2%	0.3%	1.0%	0.3%	0.2%	0.1%	1.0%	0.2%
F	0.9%	1.1%	0.3%	1.8%	2.5%	2.5%	4.9%	2.2%	4.4%	4.6%	1.9%	1.0%	1.3%	1.1%	1.0%

Intersectoral Purchases, China, 2000.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	13.2%	0.1%	9.0%	0.1%	0.2%	0.0%	1.5%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.3%	0.2%
17118	0.2%	31.7%	6.6%	0.7%	1.6%	0.2%	0.9%	3.0%	0.9%	0.3%	0.8%	0.3%	0.6%	5.6%	0.3%
19	0.0%	0.8%	24.7%	0.3%	0.2%	0.0%	0.1%	0.6%	0.1%	0.1%	0.1%	0.1%	0.3%	1.5%	0.1%
20	0.1%	0.1%	0.1%	29.3%	1.2%	0.0%	0.3%	0.3%	0.7%	0.5%	0.4%	0.3%	0.3%	9.2%	3.8%
21122	1.8%	0.6%	0.9%	1.0%	23.0%	0.1%	1.3%	1.0%	2.9%	0.3%	0.5%	1.1%	0.3%	2.8%	0.1%
23	0.3%	0.4%	0.3%	0.6%	0.7%	3.5%	4.0%	1.6%	2.4%	2.4%	0.8%	0.5%	0.6%	0.8%	2.0%
24	1.2%	5.8%	2.6%	5.0%	5.1%	1.3%	22.0%	20.5%	3.3%	1.3%	1.3%	2.5%	1.5%	3.6%	1.9%
25	1.6%	1.0%	2.9%	0.6%	2.0%	0.3%	3.2%	17.2%	1.8%	0.7%	3.3%	5.0%	4.4%	3.6%	0.8%
26	0.9%	0.4%	0.3%	0.6%	0.6%	0.6%	1.6%	0.9%	14.8%	2.8%	1.2%	3.3%	1.2%	1.5%	19.1%
27128	0.8%	0.4%	0.7%	1.7%	1.1%	0.9%	1.6%	1.9%	4.8%	33.4%	19.2%	10.4%	12.1%	6.7%	12.9%
29	0.4%	1.0%	0.4%	0.7%	1.1%	1.1%	1.2%	0.9%	2.6%	2.3%	14.2%	2.1%	8.2%	0.8%	3.0%
30133	0.2%	0.5%	0.3%	0.5%	0.8%	0.8%	0.8%	0.8%	0.9%	1.0%	5.4%	23.2%	3.1%	1.3%	3.4%
34135	0.2%	0.1%	0.1%	0.3%	0.6%	0.3%	0.3%	0.3%	0.3%	0.6%	1.5%	0.3%	23.2%	0.3%	0.3%
36137	0.1%	0.1%	0.1%	0.1%	1.0%	0.1%	0.1%	0.1%	0.3%	1.0%	0.3%	0.1%	0.1%	0.9%	0.1%
F	0.9%	1.2%	0.4%	1.7%	2.2%	1.9%	4.5%	2.0%	4.1%	4.2%	1.8%	0.9%	1.2%	1.1%	1.0%

Intersectoral Purchases, China, 2001.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	13.7%	0.1%	8.7%	0.1%	0.2%	0.0%	1.5%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.3%	0.2%
17118	0.2%	33.4%	5.8%	0.5%	1.4%	0.2%	0.8%	2.0%	0.9%	0.4%	0.8%	0.3%	0.5%	5.5%	0.4%
19	0.0%	0.8%	27.2%	0.2%	0.1%	0.0%	0.1%	0.7%	0.1%	0.1%	0.1%	0.1%	0.2%	1.6%	0.1%
20	0.1%	0.1%	0.1%	30.3%	1.3%	0.1%	0.3%	0.4%	0.7%	0.6%	0.4%	0.3%	0.3%	9.2%	4.1%
21122	1.8%	0.7%	0.9%	0.9%	23.0%	0.1%	1.3%	1.0%	2.7%	0.3%	0.5%	1.1%	0.3%	2.8%	0.1%
23	0.3%	0.4%	0.3%	0.7%	0.7%	4.5%	4.5%	1.6%	2.6%	2.5%	0.8%	0.5%	0.5%	0.8%	2.1%
24	1.1%	5.5%	2.6%	5.2%	5.3%	1.6%	22.4%	20.6%	3.5%	1.3%	1.2%	2.3%	1.5%	3.4%	2.0%
25	1.6%	1.0%	2.8%	0.6%	2.1%	0.4%	3.3%	17.9%	1.8%	0.7%	3.4%	4.9%	4.1%	3.7%	0.8%
26	0.9%	0.4%	0.3%	0.5%	0.5%	0.7%	1.5%	0.9%	14.3%	2.8%	1.1%	3.3%	1.1%	1.5%	17.5%
27128	0.8%	0.4%	0.7%	1.6%	1.1%	1.1%	1.5%	2.0%	4.7%	33.4%	19.0%	9.7%	11.4%	6.5%	13.2%
29	0.3%	1.0%	0.4%	0.8%	1.1%	1.4%	1.3%	0.9%	2.9%	2.4%	15.3%	2.2%	8.2%	0.8%	3.4%
30133	0.2%	0.5%	0.3%	0.5%	0.7%	1.0%	0.9%	0.8%	1.0%	0.9%	5.5%	24.9%	3.0%	1.3%	3.3%
34135	0.2%	0.2%	0.1%	0.4%	0.6%	0.4%	0.3%	0.4%	0.3%	0.6%	1.5%	0.4%	24.8%	0.4%	0.4%
36137	0.1%	0.1%	0.1%	0.1%	0.9%	0.1%	0.1%	0.1%	0.3%	1.1%	0.3%	0.1%	0.1%	0.9%	0.1%
F	0.9%	1.3%	0.4%	1.8%	2.1%	2.4%	4.8%	2.1%	4.5%	4.3%	1.9%	0.9%	1.2%	1.1%	1.1%



Intersectoral Purchases, China, 2002.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	14.4%	0.1%	8.5%	0.1%	0.2%	0.0%	1.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	0.1%
1718	0.2%	34.4%	4.9%	0.4%	1.2%	0.3%	0.6%	0.9%	0.9%	0.4%	0.8%	0.3%	0.5%	5.3%	0.4%
19	0.0%	0.8%	29.3%	0.1%	0.1%	0.0%	0.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.2%	1.7%	0.0%
20	0.1%	0.1%	0.1%	29.5%	1.3%	0.0%	0.2%	0.4%	0.7%	0.6%	0.4%	0.2%	0.2%	8.7%	4.0%
2122	1.6%	0.7%	0.9%	0.9%	22.5%	0.1%	1.2%	0.9%	2.4%	0.3%	0.5%	1.0%	0.2%	2.8%	0.1%
23	0.3%	0.4%	0.3%	0.7%	0.7%	5.3%	4.9%	1.5%	2.8%	2.8%	0.8%	0.4%	0.5%	0.9%	2.2%
24	1.2%	5.4%	2.8%	5.8%	5.8%	1.9%	23.1%	21.4%	3.9%	1.4%	1.3%	2.2%	1.5%	3.5%	2.2%
25	1.6%	1.0%	2.6%	0.6%	2.1%	0.4%	3.2%	17.6%	1.7%	0.6%	3.5%	4.6%	3.9%	3.6%	0.7%
26	0.9%	0.4%	0.3%	0.4%	0.4%	0.6%	1.2%	0.9%	13.0%	2.9%	1.0%	3.3%	1.0%	1.6%	16.1%
2728	0.7%	0.3%	0.6%	1.5%	1.0%	1.1%	1.3%	1.8%	4.3%	31.6%	17.8%	8.5%	10.1%	5.9%	12.6%
29	0.3%	1.0%	0.4%	0.8%	1.1%	1.5%	1.2%	0.9%	3.0%	2.4%	16.0%	2.2%	7.9%	0.8%	3.7%
3033	0.2%	0.5%	0.3%	0.5%	0.7%	1.1%	0.9%	0.8%	1.1%	0.9%	5.5%	24.2%	2.8%	1.3%	3.2%
3435	0.3%	0.2%	0.1%	0.4%	0.7%	0.4%	0.3%	0.4%	0.3%	0.7%	1.4%	0.4%	26.6%	0.4%	0.4%
3637	0.0%	0.1%	0.0%	0.1%	0.8%	0.0%	0.1%	0.1%	0.2%	0.9%	0.2%	0.1%	0.1%	0.7%	0.1%
F	0.9%	1.4%	0.4%	1.9%	2.1%	2.7%	4.9%	2.1%	5.0%	4.6%	2.1%	0.9%	1.2%	1.2%	1.2%

Intersectoral Purchases, China, 2003.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	15.6%	0.3%	9.3%	0.2%	0.3%	0.3%	1.7%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.4%	0.2%
1718	0.2%	35.6%	5.7%	0.4%	1.1%	0.2%	0.6%	1.3%	0.7%	0.4%	0.6%	0.3%	0.4%	4.9%	0.4%
19	0.0%	1.4%	28.0%	0.1%	0.1%	0.0%	0.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%	1.9%	0.0%
20	0.1%	0.1%	0.1%	31.3%	1.6%	0.0%	0.2%	0.3%	0.8%	0.6%	0.4%	0.2%	0.3%	10.0%	3.5%
2122	1.7%	0.8%	0.9%	1.0%	25.2%	0.2%	1.2%	1.0%	2.2%	0.3%	0.5%	0.9%	0.3%	2.4%	0.1%
23	0.2%	0.4%	0.4%	0.5%	0.6%	4.2%	5.1%	1.3%	2.3%	2.6%	0.7%	0.4%	0.4%	0.6%	1.7%
24	1.0%	5.9%	3.2%	5.9%	6.4%	1.8%	24.4%	23.8%	4.6%	1.5%	1.3%	2.5%	1.5%	3.8%	2.4%
25	1.8%	1.0%	3.0%	0.5%	2.2%	0.3%	3.0%	18.8%	1.5%	0.6%	3.0%	4.3%	3.6%	3.8%	0.9%
26	0.7%	0.3%	0.2%	0.3%	0.3%	0.5%	1.0%	0.6%	15.4%	2.2%	0.8%	2.4%	0.8%	1.5%	17.4%
2728	0.6%	0.3%	0.6%	1.5%	1.0%	0.8%	1.4%	1.8%	4.4%	32.4%	18.9%	10.0%	9.9%	6.6%	13.6%
29	0.3%	1.0%	0.5%	0.9%	1.1%	1.5%	1.3%	1.1%	2.8%	2.9%	17.0%	2.2%	7.8%	0.8%	3.3%
3033	0.2%	0.4%	0.3%	0.4%	0.6%	0.6%	0.7%	0.6%	0.8%	0.8%	5.6%	22.8%	3.3%	1.2%	3.3%
3435	0.2%	0.2%	0.1%	0.4%	0.7%	0.4%	0.3%	0.4%	0.5%	0.8%	1.5%	0.4%	27.5%	0.6%	0.5%
3637	0.0%	0.1%	0.0%	0.1%	0.9%	0.0%	0.1%	0.1%	0.3%	0.8%	0.2%	0.1%	0.1%	0.8%	0.1%
F	0.9%	1.4%	0.4%	1.8%	2.1%	2.8%	4.8%	2.0%	5.1%	4.4%	2.0%	0.9%	1.1%	1.2%	1.2%

Intersectoral Purchases, China, 2004.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	14.4%	0.4%	9.8%	0.3%	0.4%	0.4%	1.6%	0.3%	0.3%	0.3%	0.2%	0.3%	0.2%	0.5%	0.3%
17t18	0.2%	34.1%	6.0%	0.3%	1.0%	0.1%	0.5%	1.4%	0.5%	0.3%	0.5%	0.3%	0.4%	4.3%	0.4%
19	0.0%	1.4%	23.6%	0.1%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.6%	1.6%	0.0%
20	0.1%	0.1%	0.1%	31.4%	1.7%	0.0%	0.2%	0.3%	0.8%	0.6%	0.4%	0.2%	0.3%	10.8%	3.1%
21t22	1.7%	0.9%	1.1%	1.2%	28.2%	0.2%	1.3%	1.2%	2.3%	0.3%	0.5%	1.0%	0.3%	2.4%	0.1%
23	0.3%	0.5%	0.5%	0.6%	0.7%	4.0%	6.2%	1.6%	2.5%	3.0%	0.9%	0.4%	0.5%	0.7%	1.8%
24	0.8%	6.2%	3.5%	5.7%	6.5%	1.4%	23.5%	24.8%	4.7%	1.4%	1.2%	2.6%	1.7%	3.9%	2.4%
25	1.6%	0.9%	3.2%	0.4%	2.1%	0.2%	2.6%	18.4%	1.3%	0.5%	2.6%	4.0%	3.6%	3.7%	0.9%
26	0.6%	0.2%	0.2%	0.2%	0.2%	0.4%	0.9%	0.4%	15.3%	1.8%	0.7%	2.1%	0.8%	1.4%	18.2%
27t28	0.5%	0.4%	0.7%	1.5%	0.9%	0.6%	1.4%	1.9%	4.3%	31.5%	20.1%	11.4%	10.9%	7.0%	14.3%
29	0.2%	0.8%	0.5%	0.7%	0.9%	0.9%	1.0%	0.9%	2.0%	2.3%	13.8%	1.8%	6.6%	0.6%	2.3%
30t33	0.2%	0.3%	0.2%	0.3%	0.5%	0.3%	0.5%	0.5%	0.6%	0.6%	5.3%	19.0%	3.5%	1.0%	3.1%
34t35	0.1%	0.2%	0.1%	0.3%	0.6%	0.2%	0.2%	0.3%	0.4%	0.6%	1.3%	0.3%	25.0%	0.5%	0.4%
36t37	0.0%	0.0%	0.0%	0.1%	0.6%	0.0%	0.0%	0.1%	0.2%	0.4%	0.2%	0.1%	0.1%	0.5%	0.0%
F	1.0%	1.8%	0.5%	2.2%	2.6%	3.0%	5.6%	2.5%	6.1%	5.2%	2.5%	1.2%	1.4%	1.5%	1.5%

Intersectoral Purchases, China, 2005.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	16.4%	0.5%	11.0%	0.4%	0.5%	0.4%	1.9%	0.4%	0.4%	0.4%	0.3%	0.3%	0.3%	0.6%	0.4%
17118	0.2%	35.9%	6.3%	0.3%	1.0%	0.1%	0.5%	1.6%	0.5%	0.3%	0.4%	0.3%	0.4%	4.3%	0.4%
19	0.0%	1.7%	24.1%	0.1%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	0.7%	1.7%	0.0%
20	0.1%	0.1%	0.1%	33.3%	1.8%	0.0%	0.2%	0.3%	0.9%	0.6%	0.5%	0.3%	0.3%	11.7%	2.9%
21122	1.8%	1.0%	1.2%	1.3%	30.9%	0.2%	1.4%	1.3%	2.3%	0.3%	0.5%	1.0%	0.4%	2.3%	0.2%
23	0.3%	0.5%	0.6%	0.6%	0.6%	3.7%	6.4%	1.6%	2.4%	3.0%	0.9%	0.4%	0.5%	0.6%	1.7%
24	0.8%	6.5%	3.6%	5.8%	6.8%	1.3%	24.1%	26.2%	4.9%	1.5%	1.2%	2.8%	1.7%	4.1%	2.4%
25	1.7%	0.9%	3.4%	0.4%	2.2%	0.2%	2.6%	19.5%	1.3%	0.5%	2.5%	4.1%	3.7%	3.8%	0.9%
26	0.6%	0.2%	0.2%	0.2%	0.2%	0.4%	0.9%	0.4%	15.7%	1.7%	0.7%	2.0%	0.8%	1.4%	19.4%
27128	0.5%	0.4%	0.7%	1.5%	0.9%	0.5%	1.4%	1.9%	4.3%	31.8%	21.0%	12.2%	11.1%	7.3%	14.9%
29	0.2%	0.7%	0.5%	0.8%	0.9%	0.9%	1.0%	0.9%	2.0%	2.4%	14.5%	1.8%	6.8%	0.6%	2.2%
30133	0.2%	0.3%	0.2%	0.3%	0.5%	0.2%	0.5%	0.5%	0.6%	0.6%	5.4%	19.1%	3.7%	1.0%	3.2%
34135	0.1%	0.2%	0.1%	0.3%	0.6%	0.2%	0.2%	0.4%	0.4%	0.6%	1.4%	0.3%	26.4%	0.6%	0.4%
36137	0.0%	0.0%	0.0%	0.1%	0.6%	0.0%	0.0%	0.1%	0.2%	0.4%	0.1%	0.1%	0.1%	0.4%	0.0%
F	1.1%	1.9%	0.5%	2.3%	2.8%	3.1%	5.8%	2.6%	6.5%	5.4%	2.7%	1.3%	1.4%	1.5%	1.5%

Intersectoral Purchases, China, 2006.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	18.5%	0.7%	11.7%	0.5%	0.7%	0.4%	2.2%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.7%	0.5%
17118	0.2%	38.9%	6.8%	0.3%	1.2%	0.1%	0.6%	1.9%	0.6%	0.4%	0.4%	0.3%	0.4%	4.5%	0.5%
19	0.0%	2.1%	26.3%	0.1%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	0.8%	1.9%	0.0%
20	0.1%	0.1%	0.2%	36.2%	2.2%	0.0%	0.2%	0.3%	1.0%	0.7%	0.5%	0.3%	0.4%	12.6%	2.9%
21122	1.7%	1.0%	1.0%	1.2%	30.6%	0.2%	1.4%	1.2%	2.2%	0.3%	0.4%	0.9%	0.3%	2.0%	0.2%
23	0.2%	0.4%	0.4%	0.4%	0.5%	2.5%	5.4%	1.2%	2.0%	2.5%	0.7%	0.3%	0.4%	0.4%	1.3%
24	0.8%	6.5%	3.5%	5.8%	7.3%	1.1%	24.8%	27.1%	5.1%	1.5%	1.2%	2.7%	1.6%	4.0%	2.5%
25	1.9%	0.9%	3.4%	0.4%	2.5%	0.2%	2.8%	21.0%	1.4%	0.6%	2.4%	4.0%	3.7%	4.0%	1.1%
26	0.6%	0.2%	0.1%	0.2%	0.2%	0.3%	0.8%	0.3%	15.3%	1.5%	0.7%	1.7%	0.7%	1.3%	19.2%
27128	0.5%	0.4%	0.7%	1.6%	1.0%	0.4%	1.6%	2.0%	4.6%	33.4%	21.4%	12.4%	11.1%	7.5%	16.0%
29	0.2%	0.8%	0.6%	0.9%	1.1%	0.9%	1.2%	1.1%	2.2%	2.8%	16.1%	2.0%	7.4%	0.7%	2.4%
30133	0.2%	0.4%	0.3%	0.4%	0.7%	0.2%	0.6%	0.6%	0.7%	0.8%	6.6%	23.9%	4.5%	1.3%	4.1%
34135	0.1%	0.2%	0.1%	0.4%	0.7%	0.2%	0.3%	0.4%	0.5%	0.6%	1.4%	0.3%	26.8%	0.6%	0.4%
36137	0.0%	0.1%	0.0%	0.1%	0.9%	0.0%	0.1%	0.2%	0.2%	0.5%	0.2%	0.1%	0.1%	0.7%	0.1%
F	0.9%	1.5%	0.4%	1.9%	2.4%	2.1%	5.0%	2.2%	5.5%	4.5%	2.2%	1.0%	1.1%	1.2%	1.3%

Intersectoral Purchases, China, 2007.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	19.1%	0.7%	12.0%	0.6%	0.7%	0.5%	2.2%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.7%	0.5%
17t18	0.2%	40.1%	7.1%	0.3%	1.2%	0.1%	0.6%	2.0%	0.5%	0.4%	0.4%	0.3%	0.4%	4.5%	0.5%
19	0.0%	2.2%	26.4%	0.1%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.1%	0.8%	1.9%	0.0%
20	0.1%	0.1%	0.2%	37.8%	2.4%	0.0%	0.2%	0.3%	1.1%	0.7%	0.5%	0.3%	0.4%	13.3%	2.7%
21t22	1.8%	1.0%	1.0%	1.2%	31.4%	0.2%	1.4%	1.3%	2.2%	0.3%	0.4%	0.9%	0.3%	1.9%	0.2%
23	0.2%	0.4%	0.4%	0.4%	0.5%	2.8%	5.7%	1.2%	2.0%	2.5%	0.7%	0.3%	0.3%	0.4%	1.3%
24	0.8%	6.8%	3.7%	5.8%	7.7%	1.3%	26.1%	28.3%	5.4%	1.5%	1.2%	2.8%	1.6%	4.1%	2.5%
25	2.0%	1.0%	3.6%	0.4%	2.5%	0.2%	2.8%	21.7%	1.4%	0.6%	2.3%	4.1%	3.6%	4.0%	1.1%
26	0.6%	0.2%	0.1%	0.2%	0.2%	0.3%	0.8%	0.3%	15.6%	1.5%	0.6%	1.7%	0.6%	1.2%	19.5%
27t28	0.5%	0.4%	0.8%	1.6%	1.0%	0.4%	1.7%	2.1%	4.9%	34.2%	22.0%	13.1%	11.0%	7.7%	16.6%
29	0.3%	0.8%	0.6%	0.9%	1.1%	1.0%	1.3%	1.2%	2.3%	3.0%	16.9%	2.1%	7.5%	0.7%	2.4%
30t33	0.2%	0.4%	0.3%	0.3%	0.7%	0.2%	0.6%	0.5%	0.7%	0.7%	6.6%	25.0%	4.4%	1.2%	4.1%
34t35	0.1%	0.2%	0.1%	0.4%	0.8%	0.2%	0.3%	0.5%	0.6%	0.7%	1.6%	0.4%	29.7%	0.7%	0.5%
36t37	0.0%	0.1%	0.0%	0.1%	0.7%	0.0%	0.1%	0.1%	0.2%	0.4%	0.2%	0.1%	0.1%	0.6%	0.1%
F	0.9%	1.6%	0.4%	1.9%	2.5%	2.5%	5.2%	2.3%	5.8%	4.6%	2.2%	1.0%	1.1%	1.2%	1.3%

Intersectoral Purchases, China, 2008.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	18.9%	0.7%	11.7%	0.6%	0.7%	0.5%	2.3%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.7%	0.5%
17118	0.2%	42.3%	7.6%	0.4%	1.4%	0.1%	0.7%	2.3%	0.6%	0.4%	0.4%	0.3%	0.5%	5.0%	0.6%
19	0.0%	2.2%	27.4%	0.1%	0.1%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	0.9%	2.1%	0.0%
20	0.1%	0.1%	0.2%	38.0%	2.4%	0.0%	0.2%	0.3%	1.1%	0.7%	0.5%	0.3%	0.4%	13.2%	2.8%
21122	1.7%	0.9%	1.0%	1.2%	31.6%	0.2%	1.4%	1.3%	2.2%	0.3%	0.4%	0.9%	0.3%	1.8%	0.2%
23	0.2%	0.4%	0.4%	0.4%	0.5%	2.4%	5.7%	1.2%	2.0%	2.5%	0.7%	0.3%	0.3%	0.4%	1.3%
24	0.7%	6.4%	3.5%	5.9%	7.7%	1.1%	25.7%	28.4%	5.4%	1.5%	1.2%	2.9%	1.6%	4.1%	2.6%
25	1.9%	0.9%	3.5%	0.4%	2.6%	0.2%	2.9%	22.2%	1.5%	0.6%	2.4%	4.2%	3.7%	4.1%	1.1%
26	0.5%	0.2%	0.1%	0.2%	0.2%	0.3%	0.8%	0.3%	15.0%	1.4%	0.6%	1.6%	0.6%	1.2%	19.2%
27128	0.5%	0.4%	0.7%	1.6%	1.0%	0.4%	1.7%	2.1%	4.8%	33.5%	22.0%	13.2%	11.0%	7.6%	16.6%
29	0.3%	0.9%	0.7%	1.0%	1.2%	1.0%	1.4%	1.3%	2.5%	3.3%	18.8%	2.3%	8.3%	0.8%	2.6%
30133	0.2%	0.3%	0.3%	0.4%	0.7%	0.2%	0.6%	0.6%	0.7%	0.8%	6.9%	27.8%	4.6%	1.3%	4.2%
34135	0.1%	0.2%	0.1%	0.4%	0.8%	0.2%	0.3%	0.5%	0.6%	0.7%	1.6%	0.4%	29.5%	0.7%	0.5%
36137	0.0%	0.1%	0.0%	0.1%	0.8%	0.0%	0.1%	0.2%	0.2%	0.4%	0.2%	0.1%	0.1%	0.7%	0.1%
F	0.9%	1.5%	0.4%	1.9%	2.6%	2.2%	5.2%	2.3%	5.9%	4.6%	2.3%	1.1%	1.1%	1.2%	1.3%

Intersectoral Purchases, China, 2009.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	19.1%	0.7%	11.5%	0.6%	0.8%	0.6%	2.4%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.8%	0.6%
17t18	0.2%	44.1%	8.0%	0.4%	1.5%	0.1%	0.8%	2.5%	0.7%	0.5%	0.5%	0.3%	0.5%	5.5%	0.6%
19	0.0%	2.3%	28.8%	0.1%	0.2%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	1.0%	2.3%	0.0%
20	0.1%	0.1%	0.2%	37.3%	2.3%	0.0%	0.2%	0.3%	1.1%	0.7%	0.5%	0.3%	0.4%	12.7%	2.8%
21t22	1.7%	0.9%	0.9%	1.2%	31.3%	0.2%	1.4%	1.3%	2.3%	0.3%	0.4%	0.9%	0.3%	1.8%	0.2%
23	0.2%	0.3%	0.4%	0.4%	0.5%	3.0%	5.7%	1.2%	2.1%	2.5%	0.7%	0.3%	0.3%	0.4%	1.3%
24	0.7%	6.1%	3.4%	6.0%	7.8%	1.4%	26.7%	28.7%	5.7%	1.6%	1.3%	2.9%	1.7%	4.1%	2.7%
25	1.9%	0.9%	3.4%	0.4%	2.6%	0.3%	3.0%	22.4%	1.5%	0.6%	2.5%	4.2%	3.8%	4.1%	1.2%
26	0.5%	0.1%	0.1%	0.1%	0.1%	0.3%	0.7%	0.3%	14.0%	1.3%	0.6%	1.5%	0.6%	1.1%	17.8%
27t28	0.5%	0.4%	0.7%	1.6%	1.0%	0.5%	1.7%	2.1%	5.0%	34.3%	22.4%	13.0%	11.2%	7.5%	17.1%
29	0.3%	0.7%	0.6%	1.0%	1.1%	1.1%	1.3%	1.2%	2.5%	3.1%	17.7%	2.1%	7.8%	0.7%	2.5%
30t33	0.2%	0.4%	0.3%	0.4%	0.7%	0.3%	0.7%	0.6%	0.8%	0.8%	7.4%	30.5%	4.9%	1.4%	4.5%
34t35	0.1%	0.2%	0.1%	0.4%	0.8%	0.2%	0.3%	0.4%	0.6%	0.7%	1.6%	0.4%	28.7%	0.6%	0.5%
36t37	0.0%	0.1%	0.0%	0.1%	0.9%	0.0%	0.1%	0.2%	0.3%	0.5%	0.3%	0.1%	0.1%	0.8%	0.1%
F	0.9%	1.4%	0.4%	1.9%	2.5%	2.7%	5.2%	2.3%	5.9%	4.6%	2.2%	1.0%	1.1%	1.2%	1.4%



Intersectoral Purchases, China, 2010.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	19.3%	0.7%	11.6%	0.6%	0.7%	0.5%	2.3%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.7%	0.5%
17t18	0.2%	43.7%	8.0%	0.4%	1.5%	0.1%	0.7%	2.4%	0.7%	0.5%	0.5%	0.3%	0.5%	5.3%	0.6%
19	0.0%	2.2%	28.3%	0.1%	0.2%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	1.0%	2.2%	0.0%
20	0.1%	0.1%	0.2%	37.4%	2.3%	0.0%	0.2%	0.3%	1.1%	0.7%	0.5%	0.3%	0.4%	12.7%	2.8%
21t22	1.7%	0.9%	1.0%	1.2%	31.3%	0.2%	1.4%	1.3%	2.3%	0.3%	0.4%	0.9%	0.3%	1.8%	0.2%
23	0.2%	0.4%	0.4%	0.4%	0.5%	2.6%	5.7%	1.2%	2.1%	2.5%	0.7%	0.3%	0.3%	0.4%	1.3%
24	0.7%	6.2%	3.5%	6.0%	7.7%	1.2%	26.2%	28.5%	5.6%	1.5%	1.2%	2.9%	1.7%	4.1%	2.7%
25	2.0%	0.9%	3.4%	0.4%	2.6%	0.2%	2.9%	22.0%	1.5%	0.6%	2.4%	4.2%	3.7%	4.0%	1.2%
26	0.5%	0.2%	0.1%	0.1%	0.1%	0.3%	0.7%	0.3%	13.8%	1.3%	0.6%	1.5%	0.6%	1.1%	17.8%
27t28	0.5%	0.4%	0.7%	1.6%	1.0%	0.4%	1.7%	2.1%	4.9%	33.5%	22.3%	13.2%	11.1%	7.6%	17.2%
29	0.3%	0.8%	0.6%	1.0%	1.2%	1.0%	1.3%	1.3%	2.5%	3.1%	18.1%	2.2%	8.0%	0.7%	2.6%
30t33	0.2%	0.4%	0.3%	0.4%	0.7%	0.2%	0.7%	0.6%	0.7%	0.8%	7.1%	29.1%	4.7%	1.3%	4.4%
34t35	0.1%	0.2%	0.1%	0.4%	0.8%	0.2%	0.3%	0.4%	0.6%	0.7%	1.6%	0.4%	28.9%	0.7%	0.5%
36t37	0.0%	0.1%	0.0%	0.1%	0.8%	0.0%	0.1%	0.2%	0.3%	0.5%	0.3%	0.1%	0.1%	0.8%	0.1%
F	0.9%	1.4%	0.4%	1.9%	2.5%	2.4%	5.2%	2.3%	5.9%	4.6%	2.3%	1.0%	1.1%	1.2%	1.4%

## Intersectoral Purchases, China, 2011.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	19.2%	0.7%	11.5%	0.6%	0.7%	0.4%	2.2%	0.5%	0.5%	0.4%	0.4%	0.4%	0.4%	0.7%	0.5%
1718	0.2%	43.9%	8.1%	0.4%	1.5%	0.1%	0.7%	2.4%	0.7%	0.4%	0.5%	0.3%	0.5%	5.3%	0.6%
19	0.0%	2.3%	28.8%	0.1%	0.2%	0.0%	0.1%	0.3%	0.0%	0.0%	0.0%	0.1%	1.0%	2.2%	0.0%
20	0.1%	0.1%	0.2%	37.2%	2.3%	0.0%	0.2%	0.3%	1.0%	0.6%	0.5%	0.3%	0.4%	12.7%	2.8%
2122	1.8%	0.9%	1.0%	1.2%	31.3%	0.2%	1.4%	1.3%	2.2%	0.3%	0.4%	0.9%	0.3%	1.8%	0.2%
23	0.2%	0.4%	0.4%	0.4%	0.5%	2.3%	5.6%	1.2%	2.0%	2.4%	0.7%	0.3%	0.3%	0.4%	1.3%
24	0.7%	6.2%	3.5%	6.0%	7.7%	1.1%	25.9%	28.6%	5.5%	1.5%	1.2%	2.9%	1.6%	4.1%	2.7%
25	2.0%	0.9%	3.4%		2.5%	0.2%	2.8%	21.9%	1.5%	0.6%	2.4%	4.1%	3.6%	4.0%	1.2%
26	0.5%	0.2%	0.1%	0.1%	0.1%	0.2%	0.7%	0.3%	13.5%	1.2%	0.6%	1.4%	0.6%	1.0%	17.5%
2728	0.5%	0.4%	0.7%	1.6%	1.0%	0.4%	1.7%	2.1%	4.9%	32.9%	22.1%	13.1%	11.0%	7.6%	17.2%
29	0.3%	0.7%	0.6%	0.9%	1.1%	0.8%	1.2%	1.2%	2.3%	2.9%	16.7%	2.1%	7.4%	0.7%	2.4%
3033	0.2%	0.4%	0.3%	0.4%	0.7%	0.2%	0.7%	0.6%	0.7%	0.8%	7.3%	31.0%	4.8%	1.4%	4.5%
3435	0.1%	0.2%	0.1%	0.4%	0.8%	0.2%	0.3%	0.4%	0.6%	0.7%	1.6%	0.4%	29.1%	0.7%	0.5%
3637	0.0%	0.1%	0.0%	0.1%	0.9%	0.0%	0.1%	0.2%	0.3%	0.5%	0.3%	0.1%	0.2%	0.8%	0.1%
F	0.9%	1.5%	0.4%	1.9%	2.5%	2.1%	5.2%	2.3%	5.9%	4.5%	2.3%	1.0%	1.1%	1.2%	1.4%

## APPENDIX C

### IMPORT PURCHASES BY SECTOR BETWEEN 1995-2011<sup>47</sup>

Import Purchases by Sectors, China, 1995.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1718	0.0%	6.6%	2.3%	0.3%	0.5%	0.0%	0.2%	1.4%	0.2%	0.1%	0.1%	0.0%	0.1%	1.5%	0.0%
19	0.0%	0.1%	5.8%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
20	0.0%	0.0%	0.0%	4.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1.6%	0.4%
2122	0.2%	0.1%	0.1%	0.2%	3.6%	0.0%	0.2%	0.2%	0.6%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.2%	0.1%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.2%
24	0.2%	1.3%	0.4%	0.8%	0.8%	0.3%	4.5%	4.3%	0.6%	0.2%	0.2%	0.7%	0.2%	0.9%	0.2%
25	0.1%	0.1%	0.3%	0.1%	0.2%	0.0%	0.3%	1.1%	0.2%	0.1%	0.2%	0.4%	0.4%	0.3%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2728	0.1%	0.0%	0.1%	0.3%	0.1%	0.1%	0.2%	0.2%	0.6%	3.6%	2.0%	1.6%	1.3%	0.9%	1.3%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.0%	0.3%	0.6%	0.1%	0.2%
3033	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%	0.2%	0.2%	0.3%	1.5%	8.6%	0.8%	0.4%	0.9%
3435	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	2.4%	0.0%	0.0%
3637	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

<sup>47</sup> Conditional formatting for tables in Appendix C are as follows: Green: Above average; Yellow: Top 10%; Red: Top 10.

Import Purchases by Sectors, China, 1996.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	5.9%	1.9%	0.3%	0.4%	0.0%	0.2%	1.3%	0.1%	0.0%	0.1%	0.0%	0.1%	1.3%	0.0%
19	0.0%	0.0%	4.4%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
20	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%	0.3%
21122	0.2%	0.1%	0.1%	0.2%	3.2%	0.0%	0.2%	0.1%	0.5%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.3%	0.1%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.2%
24	0.2%	1.2%	0.3%	0.7%	0.8%	0.3%	4.4%	4.0%	0.5%	0.2%	0.2%	0.7%	0.2%	0.8%	0.2%
25	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.2%	1.1%	0.1%	0.1%	0.2%	0.4%	0.4%	0.3%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
27128	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.5%	3.2%	1.8%	1.3%	1.1%	0.7%	1.1%
29	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.9%	0.2%	0.6%	0.0%	0.1%
30133	0.1%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	1.2%	7.9%	0.6%	0.3%	0.7%
34135	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.1%	2.1%	0.0%	0.0%
36137	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 1997.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17t18	0.0%	5.9%	1.9%	0.3%	0.4%	0.0%	0.2%	1.3%	0.1%	0.0%	0.1%	0.0%	0.1%	1.1%	0.0%
19	0.0%	0.0%	4.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
20	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.2%
21t22	0.2%	0.1%	0.1%	0.2%	3.2%	0.0%	0.2%	0.2%	0.5%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.0%	0.1%	0.5%	0.3%	0.1%	0.3%	0.3%	0.1%	0.1%	0.1%	0.1%	0.3%
24	0.2%	1.3%	0.3%	0.7%	0.8%	0.3%	4.7%	4.3%	0.5%	0.2%	0.2%	0.7%	0.2%	0.8%	0.2%
25	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.2%	1.1%	0.1%	0.1%	0.2%	0.4%	0.3%	0.3%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.3%
27t28	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.4%	3.0%	1.7%	1.2%	1.1%	0.6%	0.9%
29	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%	0.1%	0.4%	0.4%	2.5%	0.4%	1.6%	0.1%	0.4%
30t33	0.0%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	1.2%	7.2%	0.6%	0.3%	0.6%
34t35	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.8%	0.0%	0.0%
36t37	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.2%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 1998.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	0.4%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	5.5%	1.7%	0.2%	0.4%	0.0%	0.2%	1.0%	0.1%	0.0%	0.1%	0.0%	0.1%	1.1%	0.0%
19	0.0%	0.0%	3.8%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
20	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%
21122	0.2%	0.1%	0.1%	0.1%	3.2%	0.0%	0.2%	0.1%	0.5%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.3%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.2%
24	0.2%	1.1%	0.4%	0.8%	0.8%	0.3%	4.6%	4.1%	0.6%	0.2%	0.2%	0.6%	0.2%	0.7%	0.3%
25	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.2%	1.0%	0.1%	0.0%	0.2%	0.3%	0.3%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
27128	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	0.4%	3.0%	1.6%	1.1%	1.0%	0.6%	1.0%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.1%	0.2%	0.6%	0.0%	0.2%
30133	0.0%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%	0.2%	0.2%	1.1%	7.1%	0.6%	0.3%	0.6%
34135	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1.3%	0.0%	0.0%
36137	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

# Import Purchases by Sectors, China, 1999.

	15116	17118	19	20	21222	23	24	25	26	2728	29	30333	34335	36337	F
15116	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	6.1%	1.8%	0.1%	0.3%	0.0%	0.2%	0.8%	0.1%	0.0%	0.1%	0.0%	0.1%	1.1%	0.0%
19	0.0%	0.1%	4.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
20	0.0%	0.0%	0.0%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.2%
21222	0.2%	0.1%	0.1%	0.2%	3.6%	0.0%	0.2%	0.2%	0.5%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.3%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.2%	1.2%	0.5%	1.0%	1.0%	0.3%	5.0%	4.5%	0.7%	0.3%	0.2%	0.6%	0.3%	0.8%	0.3%
25	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.2%	1.0%	0.1%	0.0%	0.2%	0.3%	0.3%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.0%	0.0%	0.3%
2728	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.4%	3.1%	1.7%	1.0%	1.1%	0.6%	1.1%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.0%	0.2%	0.6%	0.0%	0.2%
30333	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	0.2%	0.2%	0.2%	0.2%	1.3%	9.1%	0.7%	0.4%	0.8%
34335	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	1.6%	0.0%	0.0%
36337	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.2%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2000.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17t18	0.0%	6.3%	1.7%	0.1%	0.3%	0.0%	0.1%	0.6%	0.1%	0.0%	0.1%	0.0%	0.1%	1.1%	0.0%
19	0.0%	0.1%	4.8%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
20	0.0%	0.0%	0.0%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.2%
21t22	0.2%	0.1%	0.1%	0.2%	3.8%	0.0%	0.2%	0.2%	0.5%	0.0%	0.1%	0.2%	0.0%	0.5%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.4%	0.1%	0.3%	0.3%	0.1%	0.0%	0.1%	0.1%	0.2%
24	0.3%	1.4%	0.6%	1.2%	1.2%	0.3%	5.4%	5.1%	0.8%	0.3%	0.3%	0.6%	0.3%	0.9%	0.4%
25	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.2%	0.9%	0.1%	0.0%	0.2%	0.3%	0.2%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.3%
27t28	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.2%	0.2%	0.5%	3.6%	2.1%	1.1%	1.3%	0.7%	1.4%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.0%	0.3%	0.6%	0.1%	0.2%
30t33	0.1%	0.1%	0.1%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	1.7%	11.6%	0.8%	0.6%	0.9%
34t35	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	1.5%	0.0%	0.0%
36t37	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Import Purchases by Sectors, China, 2001.

	15116	17118	19	20	21222	23	24	25	26	2728	29	30333	34335	36337	F
15116	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	5.8%	1.4%	0.1%	0.2%	0.0%	0.1%	0.3%	0.1%	0.0%	0.1%	0.0%	0.1%	1.0%	0.0%
19	0.0%	0.1%	4.7%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
20	0.0%	0.0%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.2%
21222	0.2%	0.1%	0.1%	0.1%	3.2%	0.0%	0.2%	0.1%	0.4%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.4%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.2%	1.2%	0.6%	1.2%	1.2%	0.3%	5.1%	4.7%	0.8%	0.3%	0.3%	0.5%	0.3%	0.8%	0.4%
25	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.2%	0.8%	0.1%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.3%
2728	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.2%	0.2%	0.5%	3.4%	1.9%	1.0%	1.2%	0.7%	1.3%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.1%	0.3%	0.5%	0.1%	0.3%
30333	0.1%	0.2%	0.1%	0.2%	0.3%	0.4%	0.4%	0.3%	0.3%	0.3%	1.7%	11.5%	0.9%	0.6%	1.1%
34335	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	1.7%	0.0%	0.0%
36337	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2002.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	5.7%	1.2%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.9%	0.0%
19	0.0%	0.1%	4.7%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
20	0.0%	0.0%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.2%
21122	0.2%	0.1%	0.1%	0.1%	3.2%	0.0%	0.2%	0.1%	0.3%	0.0%	0.1%	0.2%	0.0%	0.4%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.5%	0.4%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.3%	1.3%	0.7%	1.4%	1.4%	0.4%	5.7%	5.3%	0.9%	0.3%	0.3%	0.5%	0.4%	0.8%	0.5%
25	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.2%	0.8%	0.1%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.3%
27128	0.1%	0.0%	0.1%	0.2%	0.1%	0.1%	0.2%	0.2%	0.5%	4.0%	2.2%	1.1%	1.3%	0.7%	1.5%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	1.1%	0.3%	0.6%	0.1%	0.3%
30133	0.1%	0.2%	0.1%	0.2%	0.3%	0.5%	0.5%	0.4%	0.4%	0.3%	2.0%	13.6%	1.0%	0.8%	1.2%
34135	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	1.8%	0.0%	0.0%
36137	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2003.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	4.9%	1.2%	0.0%	0.1%	0.0%	0.1%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.7%	0.0%
19	0.0%	0.2%	4.2%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%
20	0.0%	0.0%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.2%
21122	0.2%	0.1%	0.1%	0.1%	3.2%	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%	0.2%	0.0%	0.3%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.5%	0.6%	0.1%	0.2%	0.3%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.2%	1.4%	0.8%	1.4%	1.5%	0.4%	5.9%	5.8%	1.1%	0.3%	0.3%	0.6%	0.4%	0.9%	0.5%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.0%	0.1%	0.0%	0.2%	0.2%	0.2%	0.2%	0.0%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.1%	0.0%	0.0%	0.4%
27128	0.1%	0.0%	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.6%	4.7%	2.6%	1.4%	1.4%	0.9%	1.9%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	1.4%	0.4%	0.7%	0.1%	0.3%
30133	0.1%	0.2%	0.1%	0.2%	0.3%	0.4%	0.5%	0.4%	0.4%	0.4%	2.4%	16.3%	1.5%	0.8%	1.3%
34135	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.4%	0.1%	0.1%
36137	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2004.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	0.6%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17t18	0.0%	4.7%	1.2%	0.0%	0.1%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%
19	0.0%	0.2%	4.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%
20	0.0%	0.0%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.1%
21t22	0.2%	0.1%	0.1%	0.1%	3.2%	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%	0.2%	0.0%	0.3%	0.0%
23	0.0%	0.1%	0.1%	0.1%	0.1%	0.5%	0.7%	0.2%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.2%	1.6%	0.9%	1.6%	1.7%	0.3%	6.4%	6.8%	1.2%	0.3%	0.3%	0.7%	0.4%	1.1%	0.6%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.2%	0.1%	0.0%	0.2%	0.3%	0.3%	0.3%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.1%	0.0%	0.0%	0.4%
27t28	0.1%	0.0%	0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.5%	4.6%	2.7%	1.5%	1.5%	0.9%	1.8%
29	0.1%	0.2%	0.1%	0.2%	0.3%	0.3%	0.3%	0.3%	0.6%	0.7%	4.3%	0.7%	2.0%	0.2%	0.7%
30t33	0.1%	0.2%	0.1%	0.2%	0.3%	0.3%	0.5%	0.4%	0.4%	0.4%	2.9%	19.6%	2.1%	0.8%	1.3%
34t35	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.8%	0.1%	0.1%
36t37	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

# Import Purchases by Sectors, China, 2005.

	15t16	17t18	19	20	21t22	23	24	25	26	27t28	29	30t33	34t35	36t37	F
15t16	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17t18	0.0%	3.5%	0.9%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%
19	0.0%	0.2%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%
20	0.0%	0.0%	0.0%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
21t22	0.1%	0.1%	0.1%	0.1%	2.6%	0.0%	0.1%	0.1%	0.2%	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%
23	0.0%	0.1%	0.1%	0.1%	0.1%	0.4%	0.7%	0.2%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.2%	1.6%	0.9%	1.5%	1.7%	0.3%	6.1%	6.7%	1.2%	0.3%	0.3%	0.7%	0.4%	1.0%	0.6%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.2%	0.1%	0.0%	0.2%	0.3%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.4%
27t28	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.5%	3.9%	2.5%	1.4%	1.3%	0.8%	1.6%
29	0.1%	0.2%	0.1%	0.2%	0.3%	0.2%	0.3%	0.2%	0.5%	0.6%	3.7%	0.7%	1.7%	0.2%	0.6%
30t33	0.1%	0.2%	0.1%	0.1%	0.3%	0.2%	0.5%	0.3%	0.3%	0.4%	2.8%	19.5%	2.1%	0.8%	1.2%
34t35	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.4%	0.1%	0.1%
36t37	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2006.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1718	0.0%	2.5%	0.7%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%
19	0.0%	0.2%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%
20	0.0%	0.0%	0.0%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
2122	0.1%	0.1%	0.1%	0.1%	2.4%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%
23	0.0%	0.1%	0.1%	0.1%	0.1%	0.4%	0.8%	0.2%	0.3%	0.3%	0.1%	0.0%	0.0%	0.1%	0.2%
24	0.1%	1.4%	0.7%	1.3%	1.6%	0.2%	5.4%	6.0%	1.1%	0.3%	0.2%	0.6%	0.3%	0.9%	0.5%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.3%	0.1%	0.0%	0.2%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
2728	0.0%	0.0%	0.1%	0.1%	0.3%	0.0%	0.1%	0.2%	0.4%	3.1%	1.9%	1.1%	1.0%	0.7%	1.3%
29	0.1%	0.2%	0.1%	0.2%	0.3%	0.2%	0.3%	0.3%	0.5%	0.6%	3.6%	0.6%	1.6%	0.2%	0.5%
3033	0.1%	0.2%	0.1%	0.1%	0.3%	0.1%	0.5%	0.3%	0.3%	0.3%	2.5%	17.3%	2.0%	0.7%	1.1%
3435	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.7%	0.1%	0.1%
3637	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2007.

	15116	17118	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
15116	0.6%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	1.8%	0.5%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
19	0.0%	0.2%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%
20	0.0%	0.0%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
2122	0.1%	0.1%	0.1%	0.1%	2.2%	0.0%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%	0.0%	0.2%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.6%	0.1%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.1%
24	0.1%	1.3%	0.7%	1.1%	1.4%	0.2%	5.0%	5.5%	1.0%	0.3%	0.2%	0.5%	0.3%	0.8%	0.5%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.2%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
2728	0.0%	0.0%	0.1%	0.1%	0.5%	0.0%	0.1%	0.2%	0.4%	3.0%	1.8%	1.0%	0.9%	0.7%	1.2%
29	0.1%	0.2%	0.1%	0.2%	0.3%	0.2%	0.3%	0.3%	0.5%	0.6%	3.6%	0.6%	1.5%	0.2%	0.5%
3033	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.4%	0.3%	0.3%	0.3%	2.3%	15.9%	1.7%	0.6%	0.9%
3435	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	2.3%	0.2%	0.1%
3637	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2008.

	1516	1718	19	20	2122	23	24	25	26	2728	29	3033	3435	3637	F
1516	0.8%	0.0%	0.5%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
1718	0.0%	1.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
19	0.0%	0.2%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%
20	0.0%	0.0%	0.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
2122	0.1%	0.1%	0.1%	0.1%	1.9%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%
23	0.0%	0.0%	0.1%	0.1%	0.1%	0.4%	0.7%	0.1%	0.3%	0.3%	0.1%	0.0%	0.0%	0.0%	0.2%
24	0.1%	1.0%	0.6%	1.0%	1.2%	0.2%	4.2%	4.8%	0.8%	0.2%	0.2%	0.5%	0.3%	0.7%	0.4%
25	0.1%	0.0%	0.2%	0.0%	0.2%	0.0%	0.1%	1.0%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
2728	0.0%	0.0%	0.0%	0.1%	0.5%	0.0%	0.1%	0.2%	0.4%	2.5%	1.5%	0.9%	0.7%	0.6%	1.0%
29	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	1.6%	0.3%	0.7%	0.1%	0.2%
3033	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.4%	0.2%	0.2%	0.2%	1.8%	12.9%	1.5%	0.5%	0.8%
3435	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.2%	0.2%	0.1%	2.0%	0.1%	0.0%
3637	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%



Import Purchases by Sectors, China, 2009.

	15116	17118	19	20	21122	23	24	25	26	27128	29	3033	34135	36137	F
15116	0.6%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	1.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
19	0.0%	0.1%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
20	0.0%	0.0%	0.0%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
21122	0.1%	0.0%	0.1%	0.1%	1.7%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
23	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.5%	0.1%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%
24	0.1%	0.8%	0.5%	0.9%	1.1%	0.2%	3.7%	4.1%	0.8%	0.2%	0.2%	0.4%	0.2%	0.6%	0.4%
25	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	1.0%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%
27128	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	0.1%	0.2%	0.3%	2.3%	1.4%	0.8%	0.7%	0.6%	1.0%
29	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	1.4%	0.3%	0.6%	0.1%	0.2%
3033	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.3%	0.2%	0.2%	0.2%	1.5%	10.5%	1.3%	0.4%	0.7%
34135	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.0%	0.1%	0.0%
36137	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2010.

	15116	17118	19	20	21122	23	24	25	26	27128	29	30133	34135	36137	F
15116	0.6%	0.0%	0.4%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	1.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%
19	0.0%	0.1%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%
20	0.0%	0.0%	0.0%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.1%
21122	0.1%	0.1%	0.1%	0.1%	1.8%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
23	0.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.6%	0.1%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.1%
24	0.1%	0.9%	0.5%	0.9%	1.2%	0.2%	4.1%	4.5%	0.8%	0.2%	0.2%	0.4%	0.2%	0.6%	0.4%
25	0.1%	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	1.2%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
27128	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	0.1%	0.2%	0.3%	2.4%	1.4%	0.8%	0.7%	0.6%	1.0%
29	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.3%	1.5%	0.3%	0.7%	0.1%	0.2%
30133	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.4%	0.2%	0.2%	0.2%	1.7%	11.7%	1.4%	0.5%	0.7%
34135	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.3%	0.1%	0.1%
36137	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.3%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Import Purchases by Sectors, China, 2011.

	15116	17118	19	20	21222	23	24	25	26	2728	29	3033	3435	3637	F
15116	0.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
17118	0.0%	1.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
19	0.0%	0.1%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
20	0.0%	0.0%	0.0%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%
21222	0.1%	0.1%	0.1%	0.1%	1.8%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
23	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	0.7%	0.1%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%	0.2%
24	0.1%	0.9%	0.5%	0.9%	1.1%	0.2%	3.9%	4.4%	0.8%	0.2%	0.2%	0.4%	0.2%	0.6%	0.4%
25	0.1%	0.0%	0.2%	0.0%	0.2%	0.0%	0.1%	1.1%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%	0.1%
26	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
2728	0.0%	0.0%	0.0%	0.1%	0.4%	0.0%	0.1%	0.2%	0.3%	2.4%	1.5%	0.8%	0.8%	0.6%	1.1%
29	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.4%	0.5%	2.9%	0.4%	1.3%	0.1%	0.4%
3033	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.3%	0.2%	0.2%	0.2%	1.6%	10.2%	1.3%	0.4%	0.7%
3435	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	2.3%	0.1%	0.1%
3637	0.0%	0.0%	0.0%	0.1%	0.3%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.2%	0.0%
F	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

## APPENDIX D

### TOTAL IMPORTS TO TOTAL INTERMEDIATE CONSUMPTION RATIO<sup>48, 49</sup>

	AtB	C	15t16	17t18	19	20	21t22	23
1995	6.27%	7.29%	4.11%	12.19%	12.96%	11.89%	9.31%	18.64%
1996	5.32%	6.43%	3.13%	11.05%	10.19%	8.57%	8.11%	18.06%
1997	5.58%	7.24%	2.92%	11.65%	9.93%	7.28%	8.32%	17.55%
1998	4.85%	5.71%	2.60%	10.52%	8.92%	6.32%	8.00%	11.33%
1999	5.00%	6.24%	2.61%	11.39%	9.63%	7.31%	9.18%	13.99%
2000	5.78%	7.28%	3.31%	12.17%	10.76%	7.71%	9.98%	29.77%
2001	5.30%	7.09%	3.20%	11.17%	10.07%	6.56%	8.92%	21.17%
2002	5.44%	7.69%	3.25%	11.06%	10.11%	7.08%	9.53%	20.38%
2003	6.56%	9.11%	4.17%	10.41%	9.82%	7.69%	9.85%	26.74%
2004	7.84%	11.65%	5.15%	11.04%	11.24%	8.56%	10.58%	30.24%
2005	7.31%	11.16%	4.75%	9.16%	9.43%	8.45%	9.54%	33.51%
2006	6.80%	10.90%	4.64%	7.37%	7.95%	7.97%	9.48%	40.03%
2007	6.42%	10.43%	4.53%	6.13%	6.90%	8.00%	9.51%	35.96%
2008	6.48%	9.48%	5.20%	5.14%	6.39%	6.43%	8.32%	43.26%
2009	5.34%	7.75%	4.26%	4.18%	5.03%	5.43%	7.56%	31.12%
2010	6.14%	9.22%	5.02%	4.61%	5.62%	6.49%	8.42%	38.01%
2011	6.17%	10.69%	5.02	4.48%	4.97%	7.12%	8.73%	44.61%

24	25	26	27t28	29	30t33	34t35	36t37	E
10.04%	11.54%	4.83%	8.10%	8.69%	16.75%	8.66%	10.37%	6.11%
9.44%	10.44%	4.24%	7.19%	7.64%	15.11%	7.52%	8.45%	5.46%
10.07%	10.88%	4.87%	7.16%	10.02%	14.35%	8.49%	8.10%	5.98%
9.36%	9.88%	4.28%	6.62%	7.27%	13.39%	6.22%	7.47%	4.44%
10.26%	10.65%	5.01%	6.99%	7.70%	16.00%	6.80%	8.31%	4.91%
12.08%	11.43%	5.72%	8.41%	8.74%	19.46%	7.42%	9.16%	5.86%
11.04%	10.36%	5.58%	8.52%	8.46%	18.87%	7.33%	8.33%	5.89%
11.91%	11.10%	6.36%	9.54%	9.45%	21.87%	7.81%	8.98%	6.75%
13.10%	12.01%	6.90%	11.27%	10.94%	25.71%	9.86%	9.37%	7.49%
14.75%	13.76%	7.87%	13.76%	15.90%	30.46%	13.15%	10.23%	7.98%
14.35%	13.12%	7.36%	13.99%	14.42%	29.62%	11.71%	9.52%	7.50%
14.32%	12.02%	7.11%	12.58%	12.90%	25.75%	11.12%	8.50%	8.32%
12.88%	11.08%	6.60%	13.46%	12.21%	23.49%	9.81%	8.17%	7.26%
12.74%	9.48%	6.12%	13.76%	8.37%	19.02%	7.69%	7.08%	7.55%
9.94%	8.20%	5.18%	11.67%	7.44%	15.58%	7.06%	6.26%	6.11%
11.60%	9.26%	6.04%	13.81%	8.10%	17.38%	7.83%	7.13%	7.46%
12.51%	9.24%	6.67%	15.35%	10.06%	15.79%	8.46%	7.25%	8.27%

<sup>48</sup> Conditional formatting: Red: Top 10%; Green: Bottom 10%; Light Red: Below Average.

<sup>49</sup> The whole table is given in four parts.

F	50	51	52	H	60	61	62	63
5.55%	Very low	6.17%	6.17%	3.68%	7.54%	8.45%	8.54%	7.97%
4.45%	Very low	5.26%	5.26%	2.86%	6.97%	8.62%	8.22%	7.03%
4.78%	Very low	5.31%	5.31%	2.88%	7.69%	10.30%	9.35%	7.07%
4.71%	Very low	4.41%	4.41%	2.53%	4.65%	4.95%	6.23%	3.36%
5.48%	Very low	5.01%	5.01%	2.25%	5.13%	5.73%	7.29%	3.39%
6.53%	Very low	5.98%	5.98%	2.55%	5.66%	6.01%	7.58%	3.86%
6.48%	Very low	5.81%	5.81%	2.40%	5.40%	5.87%	7.68%	3.75%
7.33%	Very low	6.55%	6.55%	2.58%	5.72%	6.09%	7.85%	4.11%
8.00%	Very low	7.33%	7.33%	3.34%	6.60%	6.79%	8.65%	6.30%
8.78%	Very low	8.40%	8.40%	4.20%	7.59%	7.90%	10.04%	7.77%
7.76%	Very low	7.95%	7.95%	3.80%	6.90%	7.45%	10.14%	7.33%
6.77%	Very low	7.64%	7.64%	3.72%	7.29%	8.26%	11.18%	7.36%
6.02%	Very low	7.19%	7.19%	3.79%	5.98%	7.16%	9.90%	6.65%
5.02%	Very low	6.47%	6.47%	4.32%	6.01%	6.81%	9.14%	6.25%
4.37%	Very low	5.22%	5.22%	3.35%	4.40%	4.92%	7.05%	4.68%
4.79%	Very low	5.99%	5.99%	3.77%	5.15%	5.47%	7.79%	5.39%
5.08%	Very low	6.09%	6.09%	3.62%	5.71%	6.47%	8.85%	5.92%

64	J	70	71t74	L	M	N	O	P
11.40%	6.33%	3.87%	17.72%	7.36%	7.85%	11.56%	8.28%	Very low
9.45%	5.16%	2.94%	13.69%	5.66%	6.07%	10.66%	7.19%	Very low
9.67%	4.66%	2.99%	11.50%	5.38%	5.47%	12.08%	7.56%	Very low
9.37%	3.87%	2.74%	8.26%	3.66%	4.54%	11.19%	6.62%	Very low
11.15%	4.27%	3.10%	8.93%	3.99%	5.06%	12.06%	7.47%	Very low
13.64%	5.04%	3.69%	10.47%	4.64%	5.85%	13.44%	8.62%	Very low
13.76%	4.78%	3.64%	10.23%	4.47%	5.70%	12.79%	8.31%	Very low
15.55%	5.23%	4.04%	11.18%	4.85%	6.36%	13.99%	9.25%	Very low
16.87%	6.27%	6.57%	13.40%	5.56%	8.85%	13.94%	10.00%	Very low
19.46%	7.64%	9.21%	16.96%	6.64%	10.70%	16.17%	11.57%	Very low
18.26%	7.58%	9.68%	16.51%	6.86%	10.68%	14.89%	10.97%	Very low
16.25%	7.34%	9.62%	15.17%	6.96%	10.45%	13.12%	10.12%	Very low
14.04%	6.87%	9.01%	12.72%	6.78%	10.02%	11.79%	9.07%	Very low
11.72%	6.19%	8.01%	10.80%	6.02%	8.89%	9.72%	7.90%	Very low
8.61%	4.71%	6.23%	7.22%	4.43%	6.96%	8.29%	6.21%	Very low
9.78%	5.42%	7.12%	8.31%	5.16%	8.06%	9.17%	7.02%	Very low
9.34%	5.63%	7.18%	8.12%	5.24%	8.01%	9.48%	6.85%	Very low

Note: Two sectors, namely 50 and P, have very insignificant results to be numerically noted.

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